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Accomplishments in Marketing through Service Programs

A Report of the National Marketing Service Workshop
at West Lafayette, Indiana, November 17, 18, and 19, 1959

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
in cooperation with
STATE DEPARTMENTS OF AGRICULTURE
Washington, D. C.
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PREFACE

The material herein constitutes the proceedings of the annual marketing service workshop held at Purdue University in November 1959 by officials of State departments of agriculture and the Liaison Office, Agricultural Marketing Service, U. S. Department of Agriculture. The proceedings have been printed annually since this cooperative program was started, as a working tool for the guidance of marketing service workers in the States taking part in this matched-fund program. The program is administered by the Agricultural Marketing Service, USDA.

In 1959, 40 States and Puerto Rico were cooperating in the matched-fund marketing service program, and nearly all of them were represented at the workshop. Activities carried on by the States under the program, marketing service problems encountered and anticipated, and possible solutions for problems were discussed in general sessions and in meetings of special work groups dealing with specific commodities or groups of commodities and specific functions in the marketing channels.

The theme for the 1959 workshop was "Accomplishments in Marketing Through Service Programs."

Washington, D. C.　　　　July 1960

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ACCOMPLISHMENTS IN MARKETING THROUGH SERVICE PROGRAMS

A report of the National Marketing Service Workshop
at Purdue University, Lafayette, Indiana
November 17, 18, and 19, 1959

PLANS FOR THE WORKSHOP

William C. Crow, Liaison Officer
Matching Fund Program
State Departments of Agriculture

The theme for this year's National Marketing Service Workshop, "Accomplishments in Marketing Through Service Programs," was chosen by the advisory committee representing State departments of agriculture. A committee for the State departments of agriculture and the people in the Liaison Office devoted a great deal of time and thought to developing a program around this theme that would be both interesting and of value to those attending the workshop. The members of the program committee are Phillip Alampi, New Jersey; George H. Chick, Maine; Cliff Cox, Indiana; Spencer Duncan, New York; Marvin Faller, Louisiana; Jack Gilchrist, Georgia; John Mahoney, Maryland; and John Winfield, North Carolina. Through its speakers and work group sessions this workshop is designed to inform marketing service personnel of State departments of agriculture what is being accomplished in marketing service programs carried on in the States and how their own programs can be improved.

The plan for the workshop calls for opening each half day (except Wednesday afternoon) with a general session at which a talk on a subject of general interest will be made. These talks will be given by persons with experience in their field and should provide specific information which can be used as a guide in your work groups. The speaker at the opening general session will be L. Y. Ballentine, Commissioner of the North Carolina Department of Agriculture and chairman of our advisory committee, who will give a talk based on the theme of the workshop, "Accomplishments of State Departments of Agriculture in Marketing--The Overall View." This afternoon the speaker will be Dr. H. Brooks James of North Carolina State College, who will discuss "Marketing Data Needs of Our Changing Agriculture." The evening general session will be devoted to a demonstration of the use of visual aids in State marketing work. Movies, slides, exhibits, and models will be used to describe new methods and equipment for performing various marketing operations.

Tomorrow morning I plan to talk on "How Marketing Service Programs Can Help Solve Marketing Problems." Following a dinner Wednesday evening, our banquet speaker will be Dr. Earl Butz, Dean of Agriculture and former Assistant Secretary of Agriculture. An interesting program of entertainment is planned for tomorrow evening.

The program on the third day also will open with a general session at which Phillip Alampi will discuss "The Role of State Departments of Agriculture in Marketing." Mr. Alampi is chairman of the Marketing Committee of the National Association of State Departments of Agriculture. The concluding general session on the last day of the workshop at 2:30 p.m. will give each work group leader an opportunity to present his report on the topics discussed and conclusions and recommendations reached by his work group.

The framework of this workshop is the sessions of the eight work groups. These work groups deal with administration of marketing programs, publicity and public relations, dairy products, fruits and vegetables, grain and seed, livestock, poultry and eggs, and timber products. Short talks on the work group topic and examples of project accomplishments in various fields will open most of the sessions.

Each person attending the workshop should study the subject matter to be discussed at each work group session and select those work groups which will assist him in his work and that of the State he represents. In order to get the full benefit from the work group sessions, it is important that you not change groups during a day. Stay with the work group of your choosing until conclusions are reached and recommendations have been made. If there are several persons from one State, it would be well to determine in advance which work group each representative will attend. All work groups will devote their time to what States are doing, and can do, to solve marketing problems.

To get the most out of this workshop, the main essential is to work. Listen carefully to the speeches at the general sessions and those made at the work groups. In the work group sessions enter into the discussions by asking questions and giving your views, and help your group leader keep the discussions on the subject. Be on time for all the meetings. I know that each of you can contribute something to the success of this workshop, and all of you will be able to learn a great deal from these meetings that will help you do a better job in carrying out your marketing service programs when you return to your States.

Summaries of all the speeches and conclusions of the work groups will be published in the proceedings, a copy of which will be mailed to each registered person. If you have not already done so, be sure to register as soon as possible.

ACCOMPLISHMENTS OF STATE DEPARTMENTS OF AGRICULTURE IN MARKETING--THE OVERALL VIEW

L. Y. Ballentine, Commissioner
North Carolina Department of Agriculture

A group of humorous essays by the late Robert Benchley was once published in a book entitled, "The Treasurer's Report and Other Aspects of Community Singing."

When asked to give an overall view on today's topic, my first reaction was that the assignment would be about as difficult to carry out as if I had been given the title of Bob Benchley's book for my subject. Certainly the overall view of accomplishments of State departments of agriculture in marketing covers a lot of territory.

Complicating the situation is the fact that the dictionary gives two meanings of "overall." One refers to the blue-denim kind which is familiar to at least some of us here. The other definition is the very sweeping phrase: "Including everything."

Some might think our accomplishments in marketing should be viewed entirely from the "blue-denim overall" standpoint--that they should be evaluated strictly on the basis of what they have meant to the farmer. But I am sure those who planned this program meant the overall view to "include everything." And rightly so--because in this age the farmer's interests can no longer be wrapped up in a tight little bundle and set apart from those of the rest of the economy.

Nevertheless, I will have to steer a middle course between the two definitions of "overall." It would be impossible for me to relate all our accomplishments directly to the farmer, and equally impossible for me to include everything. But this will, I hope, be a "treasurer's report" in the sense that it will deal with values, even if they are not expressed in dollars and cents. And, while it will not cover all the "aspects of community singing," it will deal with some of the aspects of our community of interests.

Perhaps a general recognition of common interests and the value of cooperative efforts should be ranked among the most important accomplishments. Such recognition has been breaking down the barriers between agencies within States, between States, and between State and Federal agencies. When administrators and marketing officials of Federal and State departments of agriculture, experiment stations, and extension services come together to exchange ideas and explore opportunities, each group not only increases its effectiveness in its own area of operation but also makes a contribution to the total marketing program. This is what has been called a "virtuous rather than a vicious circle." Through cooperation we grow individually, and as we grow individually the value of our cooperation is enhanced.

One early result of recognizing community of interest was the matching fund marketing service program authorized by the Agricultural Marketing Act of 1946. It is within the framework of this program that I intend to discuss accomplishments, for two reasons. First, because our overall accomplishments cannot be viewed apart from this program that has shored up the weak places and helped to meet the special needs at the critical times. Second, because in working with this program we have clarified objectives and arrived at a set of basic purposes which might be said to represent the general philosophic approach to the marketing work of State departments of agriculture.

At a meeting in early October, the Advisory Committee on Cooperative Work under the Agricultural Marketing Act restated the objectives in order of their priority. In this instance, priority does not relate to importance or urgency--it is merely based on what the committee believed would, at this time, bring about a better balance in the State marketing service programs and result in maximum benefit from the funds being expended. Here are the objectives as recorded in the minutes of the committee meeting:

1. Activities the purpose of which is to reduce costs of marketing and improve marketing efficiency.

2. Programs designed to expand market outlets.

3. Projects that are concerned with maintaining the quality of products as they move through the marketing system.

4. Efforts to improve the wholesaling and retailing of farm and food products.

5. Exploratory market news services to develop methods of providing needed information on prices and supplies in local markets.

6. Collection and dissemination of statistical data and other information on production, supplies, prices, utilization, and the like, when such data are used by the State in the conduct of its marketing service.

These objectives, of course, are not new. They are basically the same purposes set forth some years ago, although some have been restated in more detail. And it seems to me that a major accomplishment has been the statement of our aims resulting from the examination of our programs jointly and severally. In doing so, we have recognized and defined the needs to be met by an adequate marketing program, which was a very important first step. These are not permanent and inflexible. Changes or shifts in emphasis may be needed from time to time, but we now have a more definite starting point and direction.

From this first step have come the other accomplishments. I will list them numerically, not to indicate the order of their importance, but rather in an attempt to show the continuity--how one has grown out of another--although in some cases, of course, it is difficult to say "which came first, the chicken or the egg."

1. We have learned to define and classify marketing problems so that they can be considered in the light of importance and urgency.

2. Ways and means have been determined for getting the job done most thoroughly and efficiently.

3. Commissioners, secretaries and directors of agriculture are taking greater interest in the marketing work of their departments, and through these workshops are keeping up to date on developments, learning to exchange know-how for solving mutual problems, and, as I said earlier, the value of working together for the benefit of the national agricultural economy.

4. State departments of agriculture are becoming better organized in their marketing work, and employing better trained marketing personnel.

5. Marketing projects have been greatly improved, from the standpoint of both their selection and the procedures for carrying them out.

6. We are beginning to learn how to shift with the rapid changes taking place in agricultural marketing.

These accomplishments, of course, are stated in very general terms and cover very broad categories from the "overall view." We will have an opportunity to "get down to cases" when specific examples are presented by the capable men who will follow me on this program.

But I don't think an "overall view" can stop with listing accomplishments. It must, I believe, recognize needs not yet fully met and problems not entirely solved.

One unsolved problem has to do with the last accomplishment I listed. Yes, we are beginning to learn to shift with changes; but we need to delve deeper into this matter and see if we can come up with a formula that will help us to shift more promptly or even, in some instances, anticipate changes.

For example, marketing programs are sometimes frustrated by the sudden substitution of one commodity for another. We produce so many different commodities in this country that often we no sooner get an effective marketing program for one commodity than we find that another is being substituted for it, requiring different marketing facilities and techniques.

An example of the kind of shift we should anticipate is the current possibility that there may be a change in the supermarket purchasing pattern. Big chains with cleaning, grading, and packaging equipment in their own warehouses caused a shift away from terminal markets; but now there may be indications of a shift in the other direction, with the possibility of our State marketing programs having to provide for terminal markets with the latest equipment to process products for retail markets. The indications I have seen may be only isolated instances, and may not denote a trend. They are referred to merely as examples of why we should observe the "straws in the wind" to determine whether or not they are going to settle down into a whole new "strawstack."

One of the greatest unmet needs is to be found in the realm of what we often call "public relations," but what I prefer to call "education." There is still need for more education of the people who are producing, marketing, and processing agricultural commodities. There is a critical need to educate State and Federal legislators, businessmen, consumers, and everyone concerned as to the purpose of the marketing program and where they each fit into it.

We should be proud of the accomplishments we have made, both great and small, but we should also regard them as a challenge to accomplish more. We are a long way from having reached the ultimate in any of the broad categories of achievement I have listed, and in some we have only made a good start. There will never be a time when we can sit back and rest on our laurels, because this is the kind of job that is never finished. New problems continually arise, and often we find that the solution of one problem creates another. It is a big job, with far-reaching implications. It goes far beyond the economic welfare of the farmer and the consumer of his products. It affects not only the overall economy of our Nation, but also the health and well-being of its citizens, and its defensive position in time of either "cold" or "hot" war.

Therefore, a correspondingly big responsibility rests upon us--the heads of departments of agriculture and marketing officials at the State and Federal level--to mutually stimulate each other to greater efforts, to inspire those who have not yet done so to join in the program, to give the full weight of our influence to getting more money to meet the needs we have already defined, and to provide an incentive for dynamic developments in the future.

I could not close an overall review such as this without a word of appreciation to Bill Crow and Leight Foster and others who administer the USDA matching fund program. Their work in coordinating the objectives of the program, and in administering it with a minimum of paperwork, red tape, and expense, has been a major factor in its effectiveness. We owe it to them, as well as to ourselves, to do everything we can to keep the program active, vital, and growing.

MARKETING DATA NEEDS OF OUR CHANGING AGRICULTURE

H. Brooks James
North Carolina State College

Timely and accurate marketing data reported by the various States and by the U. S. Department of Agriculture provide the basis for many of the improvements made in our agricultural marketing system. In discussing the need for marketing data, I shall, first, discuss some of the important changes taking place in agriculture today. Second, I shall suggest a framework within which we can discuss the kinds of marketing data needed. This framework will deal with important decisions made within agriculture and the need for data concerning yesterday's, today's, and tomorrow's market. Finally, I shall discuss the challenge that we face in improving the marketing data which are now provided.

Changes in Agriculture

In an address on education and self-education, Whitehead [1] said, "There have been moments in history when new worlds were discovered--there was such a moment when Columbus discovered America. Creation widened to man's view. There is such a moment now; we are all aware that the immediate future holds within it possibilities different from anything that has been known in the past. Our views are widened.

"Mankind has entered upon a new phase. It is no good saying that you will go on in the future as you have in the past---."

Today our views of agriculture are widened. Agriculture is undergoing many rapid changes in the United States and in the world. As a result of the recent adjustments in agriculture, a new concept of agriculture is emerging. In this new concept, agriculture is defined to include three important segments of our economy.

The first segment includes the farmers themselves who are engaged in the production of crops and livestock. There are 8 million people employed on farms in the United States.

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[1] Whitehead, Alfred North, Essays in Science and Philosophy, Philosophical Library, New York, 1948, p. 123.

The second segment includes those industries which furnish supplies and services to farmers. This group of industries employs about 6 million people and is vital to the emerging concept of "agribusiness."

The third segment includes those industries and commercial enterprises that process, store, handle, and merchandise the products of our farms. This is the largest of the three groups in terms of the number of people employed. This group of industries employs about 10 million people.

Taken together, these three groups employ approximately 37 percent of the total number of persons employed in the United States. Think of it--more than one out of every three employed persons works in agriculture. Any way you look at it, these three groups are important segments of the national economy.

Changes are taking place in agriculture at a very, very rapid rate. The tremendous efforts by producers to attain greater efficiency in production are resulting in a much larger volume of business on many farms. Many farmers are resorting to specialization to make better use of highly specialized equipment so as to attain lower cost per unit of production. Area diversification and farm specialization are compatible and increasing. Science, technology, and business are becoming increasingly important to modern farming and to agribusiness.

Competition between agricultural regions is keen. The ability of a region to compete in the marketplace depends on the level of efficiency attained in the supply and service industries, on the farms, and in the industries processing and merchandising the products. It is not enough to be efficient on the farms--the farm machinery manufacturer and dealer must be efficient, the producers and distributors of fertilizer must be efficient, the processing and marketing firms must be efficient--in fact, all segments of agriculture must be efficient if a region is to hold its markets and prosper over the long run. Vertical integration is an effort on the part of management to attain greater efficiency in all segments of agricultural production and marketing.

We are all aware that the marketing of agricultural products has changed rapidly in recent years and continues to change. Many of our products now move through a national network or web of markets that serve consumers throughout the Nation. New machines, new technology, and large capital investments mean that volume of business is becoming increasingly important in attaining greater efficiency in processing and marketing. A larger percentage of our food products is being handled by large national chains. To get our products into these markets we must be able to produce a large volume of high-quality products and we must provide a dependable supply. The efficient market now deals with truckloads or carloads of products and not with small individual lots. Changes in the size and type of firms supplying farmers with goods and services, changes in the farms themselves, and changes in the firms handling farm products between the farmer's gate and the retail store call for new types of marketing data.

Why Are Marketing Data Needed

It is reasonable to assume that marketing data are collected so that people who are making decisions will have a better basis on which to reach a logical and rational choice. There are, of course, literally thousands of people making decisions of many kinds in the agricultural sector of our economy. It may be helpful if we divide these decision-makers into three major groups corresponding to those described in the previous section. When collecting marketing data then, we should ask ourselves how this information may be used by that group of industries which provides supplies and services to farmers, the farmers themselves, and that group of industries which processes, handles, and markets the products of the farm.

The supply and service industries are giving greater attention to management decisions bearing on possibilities to improve their services to farmers and their ability to compete with one another for the farmers' business. Farmers are faced with keen competition from neighbors and from producers in distant areas. Many of these producers are increasing the size of their business in an effort to attain greater efficiency, and are concerned with choices of what to produce and when and where to market their output. The processing and marketing sectors are concerned with the growth of nationwide marketing firms, many of which are integrated from shipping point to retail store, and are attempting to improve their efficiency in this new system of marketing as compared with the old. In evaluating the adequacy of marketing data as presently provided, we must concern ourselves with the contribution our information provides these three major groups of firms in making more rapid and more accurate choices.

The Challenge

The challenge facing agencies collecting and disseminating market data is to provide firms with data which will be more useful in the decision-making process. A useful way to discuss possible methods of improvement is in terms of (1) understanding yesterday's market, (2) gaining information about today's market, and (3) providing data leading to better decisions for tomorrow's market.

Yesterday's market.--The collection of data concerning yesterday's market has historically played the most important role in market news work. These data continue to be important for purposes of analysis in order to improve our understanding of how markets behave and what policies, procedures, or decisions by firms might be taken to improve the market.

Many proposals have been made for improving the reporting of yesterday's market. An example of good reporting of yesterday's market is to be found in the case of flue-cured tobacco. Flue-cured tobacco prices are reported on a type-of-farming-area basis, with sample markets chosen in each tobacco-type area. Within these markets warehouses are sampled, the warehouses chosen are changed from day to day so as to cover all warehouses in the selected market cities. Price information is obtained for each U. S. grade of tobacco sold at the warehouses in the sample. This information is made available to buyers and growers on the following day in such a way that information on grade, average price received, and the price which the tobacco stabilization corporation would have been willing to advance for that grade is provided on a single sheet. I think you'll agree that this is a very thorough and adequate coverage of yesterday's market.

Today's market.--It is more difficult to make market data available which will be useful in making decisions concerning today's market. One proposal which has been discussed is to set up a market data service similar to the stock market report, so that each firm making sales would report those sales, including quantity, quality, and price data for each sale, by wire to the central market data collection office. The central agency would compile these reports and in turn send back current summaries of volumes and prices that were collected. This kind of data would be of tremendous value to an industry, such as the broiler industry, where brokers may feel uncertain about the true quantities available in shipping areas and processors may have considerable uneasiness about the going prices in major consumer centers.

Tomorrow's market.--Data relating to tomorrow's market are even more difficult to obtain, but may, in fact, return the highest dividends in terms of improved decision making. I'm sure that market data collecting agencies are not interested in attempting price forecasting for any market. However, there may be a number of types of data which they could provide that would be quite in keeping with the goal of improving decisions for tomorrow's market.

Crop reporting estimates are useful guides to both buyers and sellers in predicting the quantity of products which will be coming on a market. Recently the Agricultural Estimates Division of the Agricultural Marketing Service developed a comprehensive plan for improving agricultural estimates for the United States. 2/ These proposals, while making a rather substantial increase in the services now rendered, simply apply what is known about the use of modern sampling methods as a basis for projecting population totals. This plan provides for the extensive use of monthly measurements of plant development during the growing season as a basis for more accurate early-season yield and volume forecasts.

Although not going quite so far into the future, more adequate summaries of quantities loaded on cars or trucks in the major producing sections of the country would provide a several-day projection for many livestock and crop products moving throughout the Nation. Many of these data are now being collected, but perhaps are not summarized in the most usable form for the new types of marketing firms which we are discussing this afternoon.

A third improvement that might be considered is a method of recording bookings of products which are already scheduled. For example, data might be collected for such products as eggs, broilers, fruits, and vegetables from processing plants or fruit and vegetable handlers who have relatively firm agreements with growers.

Fourth, it would be desirable to have more accurate data regarding short-run changes in consumer purchases in the major markets. Much of the uncertainty regarding prices and volumes which can be moved is closely related to consumer behavior, and while this cannot be fully predicted, shifts often come about gradually and might well be reported more fully in order to enable suppliers to do a better job of projecting tomorrow's market.

2/ A Program for the Development of the Agricultural Estimating Service, USDA, AMS, Feb. 1957.

In meeting the challenge of collecting marketing data which will be more useful, one must not overlook the role which new methods can play. With the declining role of the terminal market we must look for new sources of marketing data. We might reemphasize the sampling schemes proposed by the Agricultural Estimates Division of Agricultural Marketing Service by which growers and major contracting agencies might be interviewed with regard to total supplies at particular stages of development. In consuming centers one might sample the large handlers and get very accurate and useful information relating to current supplies and future prices.

Of particular importance is the concept of type of farming regions. This concept may not be fully utilized in current market data collection. State boundaries often divide otherwise homogeneous areas. For example, the northwest Arkansas broiler area actually includes portions of the States of Oklahoma and Missouri. It might be entirely feasible for market reports to be centralized at a single point for this whole area, perhaps allowing Oklahoma and Missouri to concentrate their efforts in reporting supplies and prices at the larger consumer markets in those States. 3/

Finally, market data collection agencies must be on the alert for new types of products which may be coming into existence. Examples are the increased importance of prepackaging of farm products in shipping areas. Also, there may be the need to drop old areas and old products from market reports when it is evident that they are no longer needed.

In conclusion, let me reemphasize the important contribution made by agencies which provide market data for all sectors of the agricultural industry. In our local paper a week ago, the headlines reported a possible Congressional study of the New York wholesale egg marketing system. Egg producers in my home State expressed their concern with the wide fluctuation in wholesale egg prices in recent weeks, reporting that prices varied as much as 16 cents per dozen within 2 weeks and as much as 6 cents per dozen in a single day. With the declining volume on many terminal markets and with increased integration in the marketing of farm products, new and more representative price series must be developed and accepted by the trade if we are to have the data needed for making rational decisions. This, of course, calls for cooperative effort by research agencies, by market reporting services, and by the industries involved. In any case, a forward look is needed as we evaluate the kinds of marketing data we now have available and the opportunities for improvement that lie in the years ahead.

HOW MARKETING SERVICE PROGRAMS CAN HELP SOLVE MARKETING PROBLEMS

William C. Crow, Liaison Officer
Matching Fund Program
State Departments of Agriculture

Many of the most serious problems facing agriculture lie in the field of marketing. Because of the great distances separating growing areas and the

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3/ Jackson, Hilliard, Pricing Live Broilers in Northwest Arkansas, Dept. of Agri. Econ., N. C. State College, Raleigh. 1959.

consumers, and the fact that much of the processing and handling of agricultural products is done in the marketing channels, it costs more to move products from the farm to retail outlets than the farmer gets for growing them. Marketing costs are going up--farm prices are going down. We have a complicated and ever-changing marketing system. The farmer's income and the consumer's standard of living depend to no small degree on the smooth functioning and constant improvement in this marketing system.

The pressure and importance of these marketing problems 20 years ago caused the Congress to investigate the subject with the view to enacting remedial legislation. One of the results of this investigation was the enactment of the Agricultural Marketing Act of 1946, the purpose of which was to get work done to help solve marketing problems. This legislation spelled out what was to be done and how it was to be accomplished. A part of this job was assigned to the State departments of agriculture under the matching fund provisions of the act. Thus every marketing service project a State conducts should be for the purpose of solving a marketing problem.

What are some of these problems which confront us? One of the major problems is that of getting an efficient flow of products from the farm to the consumer. This requires thousands of facilities--egg assembly plants, poultry processing plants, assembly markets, packing sheds, milk plants, grain elevators, livestock auctions, canning and freezing plants, many kinds of warehouses, wholesale houses, and retail stores. Such facilities must be of the proper size, in the right place, and correctly designed. Much equipment is needed in these facilities--not just any equipment, but the most suitable for the job at hand--and it must be properly used. Products must be brought together in these various facilities and properly graded and packaged. To maintain quality and keep deterioration and spoilage of products at a minimum as they move through this succession of facilities, proper transportation equipment, loading methods, and services are essential. The failure of this "pipeline" to function efficiently creates a barrier to the free flow of farm products, makes cost unnecessarily high, and hurts both the farmer and the consumer. The challenge of the problem of inefficient physical handling is one worthy of all the thought and attention we can give it.

Finding outlets for our agricultural products is another problem confronting agriculture. The public hears a great deal about our farm surpluses, but how fortunate we are that our problem is a surplus of some foods rather than one of starving people. Yet no one can deny that finding satisfactory outlets for farm products is a real problem. If sales are to be maximized, farmers must produce what the consumer wants--the variety desired, in the preferred form, and packaged in the proper type and size of package. Increased sales to existing outlets must be promoted, and new uses and untapped outlets for surplus products must be found. To get maximum utilization, products must move to the proper places at the required rates, and at the right times. As a last resort, when all means of finding outlets fail to move the output of our farms, it may be necessary to curtail production. However, we should not lose sight of the fact that the Nation's welfare as well as the welfare of the farmer is better served by finding outlets than by restricting production. The challenge of this problem of finding markets for farm products is terrific.

As agricultural agencies we also are concerned with problems of maximizing returns to farmers. We must supply the information on expected production, utilization, probable demand, and other subjects that will enable farmers to know what and how much to produce. Much can be done to help farmers market to best advantage--show them how to concentrate, grade, and package products, and in what form and when to sell them; and help them to know and to get the correct market price, and how to improve their bargaining position.

Another way to improve returns to growers is by getting the best marketing practices adopted. Since prices received by farmers are usually the price paid by the consumer minus marketing costs, anything we can do to hold down marketing costs will help the farmer's return. Our program should make a real contribution toward improving the income of farmers.

Since drastic changes are occurring in agricultural production and marketing, there are many problems of helping farmers and marketing agencies adjust to changing techniques. First is the problem of determining what changes are good enough to accept. Changes in production patterns in an area, the commodities grown, size of farms, and method of harvesting create problems in marketing. Rising wages or shortages of labor exert pressure for increased mechanization, which brings more problems. Changes in the size and function of marketing firms make it necessary to change facilities, equipment, marketing methods, and the way farmers deal with such firms. The constantly increasing number of services performed in marketing channels bring need for adjustments. Then there are always problems of adjusting to some current problem like compulsory poultry inspection, grain sanitation requirements, or a change in transportation. This is not a complete list of marketing problems, but surely enough examples have been cited to establish the existence of many important problems which marketing service people can help solve.

With all the problems that confront us and the limited resources available, it is most important that we not waste resources on some activity that is not solving any problem, but choose the most important problems to work on. We can receive assistance in making this choice by close contact with farm and trade groups, advisory committees, and other State and Federal agencies. It would be well worth the while of any State division of markets to prepare a list of the important marketing problems in the State, and check its performance against such a list. In selecting the problem to receive attention, choose one that is serious; that the people concerned want to solve and will cooperate on; that you have or can get competent people for; and for which useful research or other knowledge exists.

To help solve some of these problems, service agencies can first bring together the best knowledge on the subject from results of research, acquaintance with the best marketing practices, and the experience of other States on similar problems. Then they can work with farmers and marketing firms and show them how to do such things as plan a facility, choose and operate equipment, prevent deterioration and spoilage, grade and pack, choose the best market, select the best method of transportation, properly load and handle their products, find the best outlet, and many other things that will be discussed at this workshop. Service agencies also can collect and disseminate statistical and other information needed in solving the problem. They should take the lead or participate in joint programs such as promotional programs, freight rate adjustments, and organizing a cooperative association.

The first requirement in getting this work done effectively is to have a competent staff. There must be continuity in the work and in the people doing it. It is essential that the entire marketing program be properly organized and under the direction of a competent marketing man. Persons doing the work must keep up with research results, the best practices known, and how other States have handled a similar problem. Close contact should be maintained with farm and industry groups and with other State and Federal agencies concerned. A great deal of imagination, hard work, and the ability to work with people is essential.

Dozens of examples of how States are solving marketing problems through service programs will be described during this workshop. Anyone who does not know what can be accomplished by a marketing service program can find out here. Those who are working on a problem can learn at this workshop how other States have gone about solving the same problem. When these 3 days have passed, we hope that we all will have a better vision of marketing problems needing solution, more understanding of how to go about the job, and more determination to make our program a more vital force in solving marketing problems in the area we are trying to serve.

THE ROLE OF STATE DEPARTMENTS OF AGRICULTURE IN MARKETING

Phillip Alampi, Secretary
New Jersey Department of Agriculture

The profitable marketing of farm products is the most difficult and perplexing problem in American agriculture today. These are times of great surplus production of most of our farm commodities. Our great agricultural production plant has even greater capacity to produce if we dare turn it loose. The future resources employed in agriculture may well have to be reduced, especially in terms of manpower and land, if we are to successfully market our products and maintain an acceptable standard of living for our farmers.

Some of this unprecedented capacity to produce can be beneficial, both to farmers and the consuming public. The farmer will be able to convert his production facilities to more intensive operations such as livestock or fruit and vegetable production. Since these commodities require higher inputs of resources, capital, land, and labor per unit of food production, they offer greater opportunities to the farmers of the future. Increased population plus a higher standard of living will present new marketing opportunities for intensified agriculture.

State departments of agriculture must assume increasingly active roles in marketing. The changing technology of production will necessitate constant adaptation of new and improved marketing practices, including increased regulatory activities. The State departments must recognize that marketing is a special function of their overall activities requiring an administrator having specific responsibility to improve marketing of his State's agricultural products.

The marketing programs of each State will vary somewhat, depending on the products, size of farm enterprises, nearness to market, and other factors. For example, some States are large producers of beef and hogs, others poultry meat or crops. It is necessary to place the emphasis on the major commodities produced in each State.

Despite the variance in program needs just cited, it is readily evident that many States have some basic needs for a marketing division or bureau in their State departments of agriculture.

In establishing a new marketing service, or in revising an existing service, consideration should be given to including the following marketing functions:

1. Inspection and grading
2. Market news
3. Marketing development and expansion
4. Cooperative services
5. Standardization of products and packages
6. Commodity sales promotion
7. Marketing facilities
8. Statistical information
9. Transportation services
10. Market orders and commodity commissions

In addition to the above, a number of departments have various other activities such as licensing and bonding of buyers, regulation of weights and measures, market information, price reporting, and operation of State-owned farmers' markets. I would like to briefly describe how some of these activities function.

Inspection and Grading

This is a function of most State departments and is an essential service to buyers and shippers alike. Many States have a Federal-State cooperative agreement in effect. Both State and U. S. grades are used, depending on the commodity and the purpose for which inspection is desired. An inspection and grading service must be well staffed, capable of doing impartial work in applying grades and standards, and have the confidence of buyers and sellers. This function is required to insure quality control of identified products being promoted by State departments, commissions, or commodity groups.

Market News

The marketing of perishable agricultural commodities must be fast, due to their nature. The producer has little time to evaluate his alternative markets. Market news can enhance his ability to ascertain the value of his product and bargain accordingly. Without knowledge of terminal and/or shipping-point prices, the producer is less able to bargain effectively. Market news service in a State department can also provide information on crop conditions and quantities arriving and on hand in terminal markets. The recent addition of shipping-point price reporting in New Jersey has helped farmers market potatoes, blueberries, asparagus, sweetpotatoes, and apples with more assurance than before.

Market Development and Expansion

State departments have a clear responsibility in the field of market development and expansion. As production of a commodity expands, the marketing division should prepare plans to further develop existing markets and expand new outlets. This program can be initiated with Agricultural Marketing Act funds on a matched fund basis. There are numerous ways in which markets can be developed and expanded. New methods of marketing can be developed, such as consumer packs of apples, potatoes, carrots, radishes, and tomatoes. The marketing area can be expanded through development of improved handling for longer shipment.

Cooperative Services

State departments can help organize new cooperatives or, perhaps better, help merge existing marketing organizations into bigger, more effective units. News service of cooperative law changes, personnel changes, activities, and so forth can be provided. A cooperative specialist can be used to assist the organizations with special problems such as bookkeeping, methods of operation, facilities, and personnel. Trips to other areas of the State or nearby States can be arranged to study new facilities or methods of operation.

Standardization of Products and Packages

The function of standardization of products and packages is particularly important today and will be even more so in the future. Mass selling and buying require standardized products packed uniformly in standardized packages. Some commodities are shipped in such a multitude of packages that no common ground for the consummation of sales over long distances by telephone exists. Product uniformity is becoming increasingly important as our mass distribution system continues to grow.

Commodity Sales Promotion

Each State department has a responsibility to see that the sales of its major commodities are promoted. Since promotion cannot be successful over long periods of time without quality control, this requirement must be part of the sales promotion program. Sales promotion of an identified branded product can be successful. In most States, commodity groups will need the help of the State department of agriculture in establishing sound long-range promotion programs. Technical assistance should be the goal of State departments, though initial "seed money" might be needed to inaugurate a promotion program. After initial help has been provided, the commodity group should seek to become self-supporting in its promotional activities.

Marketing Facilities

State departments have a great opportunity for service in giving assistance to cooperatives, individuals, and marketing agencies in the development of plant facilities for better marketing.

The experience of State marketing officials can often be of benefit in the design and layout of packing sheds, storage houses, processing plants, farmers' markets, terminal markets, and other facilities. In some States a specialist trained in this field is desirable.

Statistical Information

Data concerning crop acreage, production, disposition, storage holdings, varieties, age of fruit trees, and location of product, are essential in the planning of sound marketing programs. Each State department should have someone in charge of the gathering of this information either as routine procedure or special projects.

Transportation Services

The transportation of farm products is becoming increasingly complex. In States where transportation is a serious problem, a specialist in this field could assist commodity groups and transportation agencies in orderly crop movement by coordinating transportation requirements with crop harvest and movement. This transportation specialist could advise growers and commodity groups as to the best methods of transportation and also any need for special facilities such as refrigeration en route.

Market Orders and Commissions

State market orders are increasing in popularity among farmers. If enabling legislation needs to be prepared, State departments should assist. When a market order is initiated under existing legislation, the State department should be the agency to administer the order, including the steps to place it into operation and the general supervision over it after it has become effective. The State should furnish technical assistance to the commodity group as long as an order remains in effect.

Commissions established to promote farm products should be under the supervision of the State department of agriculture. If this is not done they may become independent State agencies and have little coordination with the overall agricultural marketing program in the State.

Any State department that functions in all of the areas discussed above would have an exceptionally complete and full marketing program. This might be described as an ideal situation in a large State with a highly diversified agriculture. Most States have some of these activities in their division or bureau of markets. It is the duty of each State to examine its role in marketing and see if there are areas that are not being serviced though badly in need of help.

The National Association of Marketing Officials discussed the functions of a marketing division or bureau in their recent annual meeting at Asheville, N. C., and Atlanta, Ga. Their publication entitled Organization of Marketing Programs in State Departments of Agriculture, October 1959, shows the situation as it now exists throughout the United States and Puerto Rico.

State departments of agriculture have a vital role to play in the marketing of our bountiful farm products. This responsibility is growing greater each passing year. The challenge to keep abreast of new changes in our marketing system is indeed a significant one.

All engaged in marketing must display vision, foresight, imagination, and, above all, realization that the job must be accomplished, if our farmers are to remain an integral part of our free enterprise system where each is able to obtain the wealth of our land in accordance with his own abilities and desires.

ADMINISTERING MARKETING SERVICE PROGRAMS

Work Group Sessions

HOW INDUSTRY IS USING THE FLORIDA TOMATO PLANTINGS REPORT

Bruce Kelly, Florida Agricultural Experiment Station

In 1956, one year after the marketing agreement for tomatoes became effective, the tomato committee made a grant of funds to initiate the plantings report. These funds were matched by the Agricultural Marketing Service.

Before the matching fund project was started, the only supply information available to the industry was a forecast of production for the fall, winter, and spring quarters, respectively. No clue was given as to the pattern of available supplies within a quarter. Neither was there any information about acreage and production within the different producing areas of the State. The matching fund project was set up to reduce this gap.

The purpose of the tomato project is to obtain and make available to the industry the total number of acres planted each week throughout the season in each of the few tomato-producing areas of the State. Three full-time enumerators contact every tomato grower in each area once every 2 weeks and keep a running inventory of the plantings of each. In addition to the weekly plantings, the tomato report includes rainfall and temperature data, general crop condition, progress of harvesting, and other pertinent information.

During the three years the project has been operating, the tomato reports have been well received by the industry. One result noted is the effect on plantings in the different competing areas within the State. Last year, for example, Dade County, in the southern part of the State, abruptly stopped its late spring plantings because of heavy plantings farther north. Packers, repackers, buyers, and shippers are being guided more and more by the report as it gains wider acceptance in the industry.

Although the tomato report has been well received and is furnishing valuable information to the industry, it could still be improved. The summaries of acreages by week of planting are helpful to the grower in understanding how the crop is being planted. This knowledge should enable the growers to smooth out the planting pattern in order to avoid production peaks and periods of oversupply. But, as plantings mature and harvest approaches, summaries by blooming date would be more valuable as a guide to maturing acreage. Then the next logical step is a forecast of yield by weeks and areas. Such a forecast, in conjunction with weekly plantings, would provide precise information about potential supply in the market period.

Dr. William E. Black, manager for the Florida Tomato Committee, published an article in The Packer a few months ago entitled, "Let's Gear Crop Information to Modern Marketing." In this article he advocated extending acreage reports like those in the tomato report to all vegetable crops in all the producing areas of the United States. There is little doubt that supply information of this kind would be valuable. As is true with the tomato report, weekly planted acres--barring catastrophe--reflect acreages that will be available for harvest when the crop reaches naturity. This, in turn, given reasonably normal yields, reflects available supplies.

We think that any such extension should also include yield. In this context, we mean biological yield rather than harvested yield. Unlike acreage, yield data are easily collected by sampling and are relatively inexpensive. Where desirable, grade and size estimates also could be made. Good yield estimates, along with acreage, should tend to smooth the pattern of production, dampen fluctuations of price, and increase the orderliness of vegetable marketing. At least, the tomato project makes us think so.

RESULTS OF THE DAIRY PRODUCT QUALITY IMPROVEMENT PROGRAM IN KANSAS

Brace Rowley, Kansas State Board of Agriculture

The Kansas dairy marketing program, being conducted under the matching fund program, is not one based on the direct approach of finding new and better markets for Kansas dairy products, but of achieving this end through the offering of better quality dairy products. A division such as ours, whose responsibilities are the administration of dairy laws, rules, and regulations in the production, processing, and handling of dairy products, is afforded an excellent background of information on what causes poor-quality dairy products from any specific plant. Likewise, we are on the ground floor to observe factors that cause a dairy plant to consistently turn out top-quality products.

The matching fund program has made it possible for us to be more than just a protector of the consuming public. We can now direct time to working with the industry on methods and procedures that will produce a better quality dairy product.

Our market service program has been directed first to the quality improvement of the raw milk and cream used by the industry, and second to the processing procedures employed by the plants.

I would like to first discuss with you the raw milk and cream improvement program. Much of our sour cream is delivered in person by the dairy producer to the cream buying station. Several years ago we initiated cream straining days during the summer. Our fieldman and the creamery fieldman spend a day with the local cream buyer.

As each patron's cream is delivered, it is graded according to State grades and then strained in the presence of the owner through a nylon tulle cloth for the detection of insects and filth. This process is used each day, whether these two representatives are present or not. The real value of the program is the personal contact that the representatives make with the producer. They can readily point out any defects in the cream and discuss with him the causes of such defects. Handout material made available by the company or our division has been given the producers, emphasizing steps and methods of producing better quality cream. We feel that this personal contact with the buyer has left him better informed and a more effective worker with his patrons. Approximately 100 stations are visited on this program each year, and 1,500 to 2,000 producers are contacted.

Proper grading of cream is essential to the quality program. Each year we have conducted a service school in cream grading for the creamery plant graders and the creamery field superintendents. The field superintendents are in charge of training and installing cream buyers. We feel it is very important to have these men well trained as instructors for new employees and as supervisors of the older employees.

Manufacturing milk presents a different problem, because most of the producers' milk is delivered to the processing plant by a contract hauler. Personal contact with the producers is not possible during the grading and sediment testing as in the case of the cream producer. Our Kansas plants must pull sediments from each producer's cans twice each month. Our division fieldmen spot check the plants on this program at regular intervals. Milk haulers do not like to return rejected milk to the producers. Our program has been to hold conferences with these haulers at the time of making the spot checks. When the milk hauler is kept well informed, he can greatly assist the fieldman.

The use of Methylene Blue tests on each producer's milk and installation of mechanical coolers have been encouraged through the plant managers, company fieldmen and contract haulers. Several of our plants are now receiving 75 to 90 percent of their milk from farms equipped with mechanical coolers. A detailed survey of this practice will be conducted next year. Several of our plants have established a premium price for mechanically cooled milk which stands up to a 2-1/2-hour blue test. One plant has advanced the blue test requirement to 4 hours.

Grade A milk production in Kansas has been rapidly shifting to farm bulk tank handling, as in most other States. "On-the-farm quality" in production and handling receives attention from the inspection agency. The handling from the farm to the plant has been the link in the quality program in need of assistance. Many of the bulk tank truck operators were lacking in knowledge of milk sanitation. We have, therefore, initiated a service program to give these operators training. This year 117 bulk tank operators participated in a service school conducted by our division. The training program is designed to reduce the loss of milk at the plants caused by drivers collecting milk from one producer which contaminates the entire truckload. Cleaning and sanitation of the bulk tank trucks and aseptic handling methods to protect the quality of the milk have been stressed at these service schools.

Raw milk and cream transported in cans that are not free of milkstone or in cans with rust or broken seams is an ever present problem in the improvement of quality. Our division has initiated a can check program at the plant level, where we inspect the cans being returned. Bad cans are marked with an ink that will not wash off, and the date is marked on the can. Tags are placed on each can indicating its defects. Correction by replacement, retinning, or cleaning is arranged with the plant. Haulers are also instructed on the arrangements for correcting the condition of the cans. In most cases an agreement is made to have all the cans replaced or retinned within a 30-day period. This program is now reaching the stage where the plants are conducting their own programs on a routine schedule. We plan to reduce this program to only a spot check of these plants.

The steps used in processing any of the manufactured dairy products are basically established, proved methods. The use of properly designed equipment to accomplish each step in production is a factor that, we find, can help reduce quality problems. A neutralizer flavor in butter is a good example. Creameries will add the neutralizer to a vat of cream by pouring a bucket of neutralizer directly into the cream. When a stainless steel trough or perforated pipe is used to distribute the neutralizer evenly over the entire vat of cream, the neutralized flavor can be removed from the finished product. The use of stainless steel equipment instead of tinned equipment, or the use of equipment that will not deposit metallic salts in the products, often is the answer to the improvement of flavor and keeping quality. Of course, improper cleaning of all of the equipment is a big factor in poor-quality products. Keeping in mind the importance of proper equipment in good repair and adequately cleaned and sanitized, our service program with plants has been to conduct frequent surveys in each.

A flowline sampling of the products in the processing and the laboratory analysis of the flowline samples has been an important step in the survey program. By flowline sampling we refer to taking samples of the product being processed at various stages and locations in the processing. These samples are then laboratory tested for such factors as presence of yeast and mold, bacteria, coliform, proper pasteurization, acidity, and water-insoluble-acids. These flowline tests quite often pinpoint a quality problem to one particular piece of equipment or stage in the processing. Often this laboratory test gives us a picture of the condition of the equipment that cannot be seen by visual inspection. By correlating the visual inspection of the plant equipment and processing methods with the laboratory flowline reports, it is possible to readily point out to the industry the need for replacing or repairing bad equipment, or that more emphasis should be placed on cleaning and sanitation in their processing procedures. This program has resulted in the replacement of poor equipment in many of our Kansas plants.

I would hasten to say that, even with this program, we are still confronted with some plants that are using equipment in need of replacement for the production of quality products. Often it is the economic factor that causes this failure to replace equipment. The high cost of equipment replacement and the low production level often prevent the plant from making the desired change.

RESULTS OF NEW JERSEY'S PROGRAMS TO EXPAND MARKET OUTLETS

Vinton N. Thompson, New Jersey Department of Agriculture

New Jersey farmers are fortunate in having their State government's support--from the Governor and the legislators--and encouragement in their efforts to achieve economic stability and progress through sound marketing programs. Despite New Jersey's general urban character and high density of population--775 persons per square mile--34 percent of the land area remains in farms and 48 percent is forested, leaving about 18 percent totally urbanized. Many rural counties still have a basic agricultural economy, while adjacent urban areas depend to a significant extent on the food items shipped in from these nearby production areas.

Nearness to large population centers is a precious asset to our New Jersey farmers, although such a fortuitous location is a handicap to our agriculture in the sense that usually anything produced can be disposed of "at a price." Quality and uniformity of pack are often ignored by farmers who know from experience that anything they produce will find a buyer.

Difficulty arises, however, from the prices received for this produce, which is literally "dumped" on the wholesale markets in Philadelphia and New York.

Everyone here is--I am sure--aware of the changing pattern of marketing and the declining status of our wholesale terminal markets. The trend in our area--as in most of the country--is for chainstores and even large independent food distributors to establish receiving warehouses and buy directly from country shipping points, whether operated by a single large farmer, a cooperative, or an independent broker shipper.

These changes in buying habits and marketing procedures have placed new emphasis on quality, including grading of products, to assure attractive appearance, fine condition, and uniformity of product within a package and within a shipment. Consequently, the movement of farm products now has become largely a matter of large packers--be they assemblers or producers--and large lot buyers. No longer can small lots be assembled and shipped as large shipments effectively. Central grading and packing is essential to gain uniformity of product in this mass distributing era.

The New Jersey State Department of Agriculture recognized that any program to improve the marketing of our farm products must be based on rigid quality control of the product or products to be advertised, promoted, and merchandised. Nothing less would do. There could be no compromise in quality. Our products must be controlled from time of production until they reach the customer and are actually consumed and enjoyed.

What have been the results of our promotion programs to date?

Eggs and Poultry Meat

Since this was our first program, I would like to tell you what is happening in our poultry industry as a result of a vigorous promotion program to expand market outlets for eggs, poultry meat, and turkeys. All of these projects have been aided by matching funds under the Agricultural Marketing Act of 1946.

The stimulant causing producer interest in an egg marketing program was depressed marketing conditions and loss of markets caused by aggressive competition from other areas in our traditional marketing areas.

At the request of the State Poultry Association and other large organizations in our poultry industry, the New Jersey Poultry Products Promotion Tax Act was passed by the legislature, effective July 1957. The State department and the college of agriculture helped the producers plan a program that was acceptable to the State government. A citizen council functions in the State department of agriculture, with the Secretary of Agriculture and the Director of the Experiment Station serving as members. This council conducts the promotion program through an executive director and staff.

To support the quality control program and promote the use of poultry products, about $175,000 is raised by levying a tax of 1 cent per hundredweight on all poultry feed sold in New Jersey.

Success to date in promoting New Jersey eggs has been excellent. Consumer confidence is being gained for "Jersey eggs." This in turn is creating consumer demand. Since all eggs in the program are identified by the "New Jersey State Seal of Quality" and the quality is insured by continuous inspection during candling and cartoning, consumer satisfaction is assured. The following summary of growth in "State Seal" egg sales indicates the true value of the program to New Jersey producers:

1. Sales of "State Seal" quality-controlled eggs have increased from 250,000 dozen eggs per week in 1957, to nearly 700,000 dozens per week currently, despite a decrease of more than 3,000,000 layers on New Jersey farms during the period.

2. Retail outlets have grown from less than 200 to over 2,000 since the program began.

3. Plants licensed to pack "State Seal" eggs have increased from 15 to 58.

4. Premiums for New Jersey eggs have been maintained in our traditional marketing areas.

5. Demand for New Jersey eggs has been enhanced through the winning of the consumer's confidence in our quality-assured product.

The poultry meat industry offered "State Seal" roasting caponettes and could not supply the demand for these premium meat birds. Due to management difficulties and lack of volume available from producers, this program is undergoing reorganization. It is anticipated a new, sound marketing program can be developed for poultry meat specialty items by our meat bird producers, who have suffered great financial distress along with the rest of the poultry meat industry over the past year and a half.

The "State Seal" turkey program is aimed at creating local consumer demand for quality New Jersey turkeys. Most of our turkey growers sell largely at retail right from the farm. The "State Seal" promotion program with its quality control emphasis has given our turkey growers new hope not only for survival but for limited market expansion. New Jersey turkeys under the program retail at prices considerably above those being sold in chainstores. These prices often return producers 20 to 25 cents more than the prices of chainstore turkeys. A number of producers are finding that the demand exceeds their supply and are calling on less favorably located New Jersey growers to supply the extra turkeys needed. Current demand is such that few if any birds are produced for normal wholesale channels. This program has resulted in better coordination of agricultural and public health interests in New Jersey.

White Potatoes

New Jersey potato growers, because of nearness of markets and lack of competitive potatoes, have been reluctant to ship carefully packed and graded potatoes.

Potato growers and dealers alike agreed something had to be done to gain trade and consumer confidence in our New Jersey potatoes. Some thought promotion was enough. The State department--mindful of past experience--insisted on strict quality control where the "State Seal" was used. The program started in 1958, supported by a tax of 5 cents per hundredweight on seed potatoes. As a result of quality control and more uniform packing, our potatoes found new outlets right in our own State. In 1958, we moved 700 carloads of potatoes in the northern New Jersey metropolitan area, more than we had ever sold in that market before. This accomplishment alone has improved growers' confidence in their ability to successfully market their potato crops.

Currently, growers, encouraged by initial success, are packing more consumer packs, installing washing facilities, and building more storage so they can achieve orderly marketing of their crops. This is progress. Growers are recognizing the need for quality control as essential to successful marketing. These are beneficial results. Again Agricultural Marketing Act funds are used in marketing service work to supplement the $15,000 being expended by our White Potato Promotion Council.

Asparagus

Asparagus is New Jersey's most important vegetable crop, with 32,000 acres planted. In the spring of 1959, just as harvest got under way, the Asparagus Promotion and Research Tax Act was passed by the legislature and signed into law by the Governor. This act was initiated at the request of the growers and processors. Voluntary programs to expand market outlets had been tried and had failed.

The object of the 1959 asparagus promotion was to get consumers to use more fresh and processed asparagus. Emphasis was placed on consumer education and merchandising. Matched funds were used to pay the salary of a merchandising expert to assist in display problems of retailers, advise on distributing point-of-sale material, and provide technical assistance to shippers and producers in packaging.

Results cannot be properly assessed at this time, although it can be said that prices received by producers for fresh asparagus averaged about 10 percent higher than in 1958. The Asparagus Tax Act will provide about $90,000 annually for promotion and research.

Apples

The newly created New Jersey Apple Industry Council is just getting under way. It was created by the legislature in June 1959 and has been made a part of the State department of agriculture.

Its chief activity to date has been a marketing research project to determine consumer demand for summer green apples in a 4-pound convenience package. Preliminary indications, based on studies of movement through 80 retail outlets, are that this method of marketing is being favorably received by both the trade and consumers.

The apple industry expects to expend about $60,000 annually on its promotion and research efforts.

Roadside Marketing

In cooperation with a roadside marketing cooperative, the sale of New Jersey farm products has increased. This program, based on strict quality control, has developed and renewed consumer confidence in buying at roadside markets. More than 35 market operators have joined together and adopted a quality-control and promotion program, backed by good merchandising, to become an effective marketing group.

Sales by the members under this program have grown steadily since its inception in 1957 and are now approximately $1,500,000 annually. Matching funds are used by the State department of agriculture to provide marketing assistance, including quality control and merchandising, for this roadside market association, "Jersey Certified Farm Markets."

Other Activities

Under matching fund programs, assistance has been given to expand market outlets for blueberries, sweetpotatoes, honey, beef cattle, peaches, and dairy products. Due to the lack of sufficient matching Federal funds for these projects, all are in the developmental phase. It is anticipated that extensive promotion and market expansion programs for one or more of these commodities will be initiated in the near future.

The results of our New Jersey programs to expand market outlets are encouraging. It is the desire of our producers of specific commodities that these programs be further expanded to become national in scope. With this the New Jersey department heartily agrees. Expanding market outlets is everyone's job, not just one State's.

IMPROVING GRAIN STORAGE METHODS AND FACILITIES

O. W. Faison
North Carolina Department of Agriculture

You have heard the expression, "The South will rise again." This saying has become a reality in industry and agriculture in the South, particularly in the Southeast. Our own State is among those that have made tremendous strides.

We have made 50 years of progress in agriculture in the past decade. An equal amount of progress has been made in grain production, handling, storing, fumigating, drying, grading, and marketing through the use of marketing service programs.

Why a Marketing Service Program is Needed

The rapid growth of the grain industry in North Carolina is similar to the growth of any industry in that there are many inefficiencies in its development. Some of these inefficiencies are in management, organization, and inadequate facilities for handling, elevating, drying, grading, and merchandising of grain. All of these result in high costs to the producers and general confusion in the grain industry. An indication of this rapid growth is shown in the number of firms that have entered into the grain business from 1950 to 1959. The present figures show that we had 249 in 1950, and 515 in 1959.

The Crop Reporting Service in their September 1959 release estimated 130,212,000 bushels of grain for 1959. To further evaluate the need for more facilities and an increase in storage capacity, let us compare the farm and commercial storage with our total grain production. We have 21,500,000 bushels of commercial storage and 10,000,000 bushels of improved farm storage; or a total of 31,500,000 bushels. The storage capacity compared with the total grain production of 130,212,000 bushels points toward the addition of more facilities.

Because of inadequate storage and marketing facilities, on and off the farm, we are losing $10.4 million on transportation; $7.5 million on price rise from harvest to market high; and $16,276,500 to insects, rodents, birds, and deterioration. This makes a total loss of $34,176,500 throughout the State. Although the grain producers share a large percentage of this loss, existing grain marketing firms also experience a portion of the loss because of inadequate and inefficient facilities.

The "hog-round" system of merchandising grain inevitably penalizes the producer with high-quality grain. In 1950, approximately 6 percent of our grain marketing firms were buying and selling on a grade basis. At that time, they were only using moisture and/or test weight as a basis for determining price.

Even though only 31 percent of our grain marketing firms buy and sell on grade basis, approximately 60 percent of the marketable grain is graded.

A shift from hand and mechanical picking of corn to picker-shellers has also intensified our problems in handling, drying, storing, and merchandising grain. Our harvest period is being shortened each year, placing a heavier burden on existing inadequate facilities. Increased production, inadequate facilities, hog-round buying, and losses suffered by producers and the grain industry make a marketing service program imperative.

How the Marketing Service Program is Conducted (with examples)

Specialists are continuing to make surveys in cooperation with the North Carolina Extension Service and members of the North Carolina Grain Production and Marketing Committee to determine the need for additional grain facilities. These surveys include the following information for a specific area: Grain production, grain storage facilities, grain prices (cash and CCC loans), marketable grain, number of grain producers, transportation rates, warehousemen who are storing for producers direct or under the CCC loan program, construction cost estimates, operational cost estimates, income estimates, and a summary of the survey. Specialists assist these firms personally in selecting sites, reviewing plans and making recommendations for changes, securing the necessary financing, setting up grain grading laboratories with the necessary equipment, and assisting in the organization when requested.

As an example, a firm was operating in a quonset hut on a year-to-year rental basis. The operator was planning to spend $30,000 to $35,000 for his grain installation on railroad property. The railroad representatives would only give him a year-to-year lease. Specialists worked very closely with the manager of this firm in investigating other sites; however, prices of sites in this particular area were prohibitive. From experience, we knew of another grain and seed operator in this area whose business had been declining for the last 3 years but his site was excellent for expansion. We suggested that he purchase this business and move his entire operation.

To further assist in remodeling, expanding, and building grain facilities, specialists confer with interested parties and analyze the existing plant and operation. During these conferences, specialists and firm representatives discuss the management problems, need for changes to increase efficiency, how to give better service to the farmer, financial status of the firm, transportation problems, competition in the area, volume of grain and feed the firm anticipates handling, and the outline of a plan of action. We then call on the engineering section of the division of markets to assist in designing plans for remodeling and/or building new facilities.

Specialists are assisting in developing a storage system that will utilize the many tobacco warehouses throughout North Carolina. One firm has been very successful in storing grain and maintaining its quality through the use of portable wooden bins lined with paper to assure tightness for fumigation, air ducts and fans for aeration, and temperature indicators to record variations in grain temperature. If this system proves economical, several million bushels of storage capacity could be made available almost overnight.

Grain grading demonstrations are conducted and on-the-job assistance is given in merchandising grain on the basis of grade and quality. This type of assistance teaches the grain facility operators the kind of grading equipment needed, how to use the equipment, the techniques of grade determination, and the value of marketing grain on the basis of U. S. grades. In addition to grain grading demonstrations, specialists participate in countywide and statewide grain schools in cooperation with the North Carolina Grade Production and Marketing Committee. During these schools, specialists discuss merchandising of grain on a grade basis and teach procedure and techniques in grain grading. The one-week short course at North Carolina State College is designed to train elevator operators and processing plant managers to do a more efficient job in management, operation, and merchandising on a grade basis.

Results of Our Marketing Service Program

Our marketing service program is enabling us to reclaim $1,847,788 of the $34,176,500 being lost annually because of inadequate grain handling, storing, and processing facilities on and off the farms. This gain to the grain producers and industry is an average per year since 1950. Several hundred thousand dollars are reclaimed through merchandising on a grade basis. Through the increase of grain handling facilities, knowledge of how to operate a grain and feed processing facility, remodeling existing facilities, and merchandising grain on a grade basis, our grain producers are receiving top market prices for their grain. These top market prices bring benefits to the producer because of competition in the market. For example: A firm who is buying on a "hog-round" basis would be paying 5 to 10 cents per bushel less than one who is merchandising on a grade basis. The misuse of grain grading equipment in many cases results in a loss direct to the grain producer. Our marketing service program can eliminate these unnecessary losses through technical assistance to the operator. With more grain facilities, we have a more orderly marketing system.

Suggested Improvement in Marketing Service Programs

We have discussed a modern grain handling facility in which specialists assisted with the development of this plant from its original idea to its completion. This plant is in one of the best locations in North Carolina for receiving, storing, and merchandising grain. The geographical location of this plant is not only good from the standpoint of grain production, but is also good from the standpoint of its accessibility to producers because of good highways. Also, it is located on a railroad, with switching privileges, that enables it to receive and ship grain east, west, north, and south. The facility itself is modern in every respect, and its cost of operation is at a minimum. However, the original partners who built this plant have already gone out of business. Their downfall stemmed from poor management. Even though we discussed the management phase with these two men and suggested they hire a grain merchandiser and give to an experienced man the responsibility of operating the elevator and maintaining the quality of grain while in storage, neither of these suggestions was followed. The lack of designated responsibility for maintaining quality and preventing insect damage and other types of deterioration in grain was largely responsible for the failure of this operation.

Management assistance should be a part of a good marketing service program. North Carolina State College has developed a good short course on management. Our specialists are working closely with specialists at North Carolina State College in developing a cooperative program of assistance in management to grain firms. We feel that State departments of agriculture can expand their services not only to the grain producers and the grain industry, but also to other segments of agriculture business through management assistance programs.

HOW THE MATCHING FUND PROGRAM HAS IMPROVED MARKETING SERVICES IN THE STATES

Spencer G. Duncan
New York Department of Agriculture and Markets

One needs but to look around here in the Memorial Center and Union Building in this outstanding university to prove to himself that the matching fund program has definitely improved marketing services in the States. I would venture to say that before this program came into being, it would have been impossible, no matter how hard one tried, to get such a fine group of marketing service people together for a meeting. This and other workshops are conclusive evidence that the program has worked, is working, and will continue to work as long as cooperation such as we have here continues. In my opinion, the perplexing problems facing departments of agriculture, marketing bureaus, and marketing divisions prior to the Agricultural Marketing Act were responsible to a large extent for the development of topsy-like marketing divisions in many of the States.

Let us just take a quick look back into the late 1930's and early 1940's, in what we might call the horse-and-buggy days of marketing service work. Many States had no organized marketing divisions, while other States were carrying on shipping-point inspection and market news service, but in many cases covering only one or more of the most important commodities on a very limited scale. I believe we can safely say that a few States did have a fairly well-rounded marketing program under way, while other States were making limited progress toward the establishment of a division of markets.

Last year I discussed what I think was a good plan for a well-rounded marketing division. I believe I inferred that a good division of markets should include market news, inspection and grading, market development and expansion, commodities sales promotion, statistical information, marketing orders and commodity control, marketing facilities, service to cooperatives, regulatory service, standardization, and the establishment of grades. If my memory serves me correctly, there wasn't a single division of markets back there in the horse-and-buggy days that could boast of such a marketing division, and the reason, I believe, is perfectly obvious. Not enough money was available in the States to get such an organization under way. The fact of the matter is that only the most important projects could be undertaken.

In our own particular case, I am sure we would still be waiting for the day that we could start f.o.b. price reporting on livestock and poultry and eggs, volume price reporting, the movement of produce to market by truck, the reactivation of our Empire State trademark program, packaging research, and many other important projects that we have undertaken with the aid of AMA matching funds. I am sure we could never have found sufficient funds nor would we have had the trained personnel to carry on many of our projects involving research and its eventual application in our food distribution system. I think we are sometimes inclined to forget rather quickly some of our projects and the great contributions they have made to orderly marketing. We have been faced with so many changes in recent years that we virtually have had to, in the words of the president of one of our large chainstore organizations, run like the Old Harry to stand still.

I am sure that any one of the States now cooperating in the matching fund program can remember when they would have given their right arm had they been able to find some agency that would match the few thousand dollars that they had available to get some badly wanted project off the ground. It is a matter of history that many such programs have been made possible by matching funds and many more programs will be started year after year as long as matching funds are made available. I know there are a few States that have been well blessed with good-sized appropriations making it possible for them to carry on many marketing service functions. Even in these States, the matching fund program is of great value. By participating in the matching fund program, they may rotate their appropriated funds many times and get a great deal more mileage out of them.

The rapidly changing marketing picture makes it imperative that every wide-awake marketing division take full advantage by making use of every single available marketing tool. We simply cannot afford to adopt an attitude of complacency when we are challenged with so many perplexing problems. The tool designed by the Federal Government in the form of matching funds can be most useful. The many reports of projects carried on in the various States are of great value to the marketing official seeking new marketing methods. Never before have marketing officials had the opportunity of discussing marketing problems with other States having similar problems, and proceeding to eliminate these problems by joint action.

We have found that the employees in the Government Liaison Office have been most helpful to us in calling our attention to ways and means of solving many of our intricate marketing problems. They have had the opportunity of visiting many of the States and of obtaining accurate information that is invaluable to us in making our plans. In analyzing the various projects, they bring to us a wealth of practical knowledge. We are grateful for this cooperation.

As I see it, the marketing challenges that we have faced in the past are but mere infants compared with the problems that will be facing us in the very near future. For example, we must face the fact that direct marketing is upon us. It is here to stay. We can let it develop like topsy, or we can make an effort to organize it in such a way that it will be a boon to our local producers.

We have also heard a great deal about specification buying. What are we doing to acquaint our producers with this comparatively new marketing method? New and spectacular packaging is in the offing. Are we ready to bring it to the attention of our marketing organizations? Mechanical harvesting is still another evolution that will bring many changes, not only in our inspection work but also in our handling and storing operations. What are we doing about that? Bulk handling is a partner to mechanical harvesting. It will be necessary for us to keep on our toes if we keep up with this development. The mechanical candling and weighing of eggs is another matter that we are bound to be concerned with. We must make it our business to know that our producers are getting a fair deal and honest returns. We will be continually confronted with the responsibility of finding markets for new products and holding our markets for the old.

In my opinion, we haven't even begun to scratch the surface. There are new horizons ahead. Only by cooperative effort can we hope to solve our marketing problems and keep abreast of the challenges that arise daily in our marketing work.

There are two things that I do know, and they are that the matching fund program has improved marketing service work throughout the United States, and it can be of great assistance to us in solving the many intricate marketing problems that we will be facing in the years ahead. Above all, we must cooperate with one another if we are to make progress.

LEAN PORK PROMOTION

James H. Stevenson
Purdue University

I would like to deviate somewhat from strictly the reporting of the pork promotion work we have done and include it as part of a more general topic. This more general topic deals with how I feel marketing service specialists can most effectively work, and do research-service work, with marketing firms.

Let me first set out how I feel this differs from traditional educational work with farmers. A large share of farming enterprises are relatively small and function almost solely on the decisions and judgments of a single entrepeneur. Most successful marketing firms depend on the judgments of many individuals. To do educational work with farmers means knowing something about many phases of the enterprise. The more one can learn and study about each little phase, the better the worker. Many times the professional man actually knows more about all the phases of how to actually manage and run a farm than the farmers themselves. We have people on our staff who own and manage sizable acreages. Thus, they are successful farmers as well as professional people.

This is not so in marketing service work. There is no one on our marketing staff who is also a meat packer or grain elevator operator, in addition to being a professional person. Nor does the staff know a great deal about managing the combined operations of a meatpacking firm. So how are we to be of service to marketing firms?

I suggest two possible ways:

1. For a particular firm, study a problem of operation in greater detail or with better analytical methods than the firm itself can attempt or do.

2. For the industry, or a group of firms, coordinate the firms into an operation which might benefit each, but which they are not developing themselves.

I would like to give some examples of what we at Purdue are doing or have done in the field of livestock marketing.

First, the servicing of the individual firm. This is best accomplished by doing one of two things:

a. Studying a problem more thoroughly or in greater detail than the firm itself can or cares to do. It is quite possible that management does not recognize the potential profits that might be accrued from the study of a particular phase of operation. Or it might recognize the potential, but not be able to shake loose manpower from regular duties to make such investigations.

For example, we have recently completed a study which required collecting data on 30,000 hogs and their carcasses from one meatpacking firm in an effort to determine what were the really important factors that made up the value of a hog to this firm. As it turned out, the average weight of a lot was most important, the dressing percentage next most important, the grade next most important, and the deviation of the weights of individual hogs in a lot the next most important. This information is now being used in the operation of the firm, yet it had neither the time nor manpower to study this phase of its operation in such detail.

b. The second area of servicing an individual firm lies in performing a service with techniques it does not have readily at hand. For example, we are attempting to do price prediction work with a meatpacking firm in our State. A large part of our work deals with statistical analytical procedures for estimating future slaughter of hogs and hog prices. We hope to expand this to include wholesale cuts of pork. Two specialists meet with the firm one evening every month to compare our statistical predictions with their judgment predictions. As of now, this is still on a "pilot" basis. If it is successful, we hope to expand it to other meatpacking firms.

In the area of industry work (work with more than one firm), perhaps the greatest service can be rendered by coordinating the activities of two or more firms for the benefit of the firms and/or the industry. An example concerns the coordination of the activities of three Indiana livestock and meat marketing firms in a study of consumer response to lean-type pork.

Much has been done and is known about the production technique, production costs, and cutout values of so-called "meat-type" hogs. Yet little is known about the potential value of these products at the consumer level. Farmers and packers have traditionally blamed each other for the lack of progress in the area of meat-type hog production and payments. To some, the potential appears greatest at neither of these levels, but at the retail level. It seemed logical that if the demand for meat-type pork was greater than that for regular pork, this would filter back through the marketing channel to the benefit of all. Thus, we took on the job of coordinating the assembly, processing, and merchandising of pork from meat-type hogs.

First, a large Indiana cooperative livestock assembly agency live-graded and sent meat-type hogs to an Indiana meatpacking firm. There the hogs were rail-graded and processed into the various wholesale cuts. Finally, the products went to a retail chain where they were sold under the brand name "Tend-R-Leen." This was an effort to differentiate the products so that people could identify the meat-type pork by something other than visual inspection. In a sense, this was a grade.

Throughout this "synthesized" marketing channel we coordinated efforts and collected information on costs, accuracy of live and carcass grading, and sales of the two kinds of cuts. What did the industry find out? At the same price, people bought 6 percent more meat-type pork than regular pork. At prices 2 and 6 cents higher, about 45 percent of all pork sold was the lean type. Live grading accuracy increased from 60 percent to 80 percent in 16 weeks. At the packing plant, there was an extra cost of 25 cents per meat-type hog over the regular hog for various extra labor functions. And finally, the promotion of the "Tend-R-Leen" pork did increase its sales somewhat.

Such information could have been gained only through a coordinated effort by three firms. We cooperated with the firms in the organization of the marketing channel and the collection of information.

COUNTRY-POINT PRICE REPORTING FOR EGGS

Burton C. Buell
New York Department of Agriculture and Markets

This past spring, a group of egg producers from our Sullivan County paraded to New York City to give eggs away. Their prime reason for this, we were told, was to help stir up a little publicity for the egg industry. But it was not a mere coincidence that the eggs were given away in front of the New York Mercantile Exchange.

The exchange and the reporting system it represents have been the topic of frequent and sometimes heated controversy for many years. To poultry and egg producers who are paid on the quotations from the exchange, this controversy has been kindled by frequent fluctuations and by prices considered by some to be lower than necessary.

In an effort to establish some form of price reporting acceptable to producers and buyers, we initiated our country-point price or f.o.b. report in July 1956.

To provide a complete story of the report, it is best to start with a brief glimpse into its history. Those of us in the division of markets, close to the situation, realized that the exchange as an egg-pricing media was obsolete and harmful to both producers and dealers. In light of this, correspondence had been carried on with Washington on the subject of country-point egg price reporting as a basis for a more just report.

In February 1956, Dr. Alfred VanWagenen, of the Northeast Poultry Producers Council, called a meeting in New York City to discuss the egg pricing problem.

Our department, the U. S. Department of Agriculture, and most of the northeastern States were represented.

F.o.b. egg reporting was the major topic. As a result of this meeting, it was agreed that New York State would survey its egg pricing situation and initiate an f.o.b. report. It was also understood that the other States would follow so that the entire northeast would join forces. But this combining of forces never came about.

In March 1956, our department conducted a survey of our leading egg-producing area, the Catskill Mountain section, which encompasses part or all of 3 counties just north of New York City. Department marketing personnel were briefed on procedure, and limited f.o.b. reporting for the Catskill area was started in July. Four months later the other producing areas were added. In 1957, we started volume-price reporting from the entire Catskill area. This was, I believe, the first time anywhere in the Nation that such a report had been issued.

From this beginning we found that f.o.b. volume price reporting was practical and had the definite advantage of putting dealers and farmers on an equal bargaining basis. Since 1957, we have altered the report only slightly and have concentrated our efforts on increasing the number of contacts while improving the dissemination of the report.

We have tried to contact all dealers and produce dealers in the State who handle more than 200 cases of eggs a week. The report is issued on Tuesday and Thursday of each week and covers between 20 and 25 thousand cases. Market reporters throughout the State contact between 40 and 50 assemblers and dealers each day the report is issued. They obtain information on prices, supply, demand, and other market conditions for eggs purchased from producers grading a minimum of 80 percent Grade A. This compares with the Mercantile Exchange minimum specification of 60 percent Grade A and 10 percent Grade AA. The price we report is the net price received by the producer at the farm.

Reporting f.o.b. on-farm egg prices in New York State is complex in view of the various methods of payment for eggs, nearly all of which are based on the exchange quotation. It is not at all like reporting prices at a wholesale market where prices are obtained from sellers and buyers immediately after transactions are consummated. We find that some prices to producers on the farm are based on the New York City quotation for one specific day of the week. Some are paid on the previous day's quotation, others on the quotation for 2 days previous, and so forth.

The reports are tailored for timeliness. Within 1/2 hour after preparation, the report is carried on radio and the newspaper circuits of both the Associated Press and United Press International wire services, so that prices paid to producers on Tuesday and Thursday mornings are reported across the State by noon the same day.

The report gives the egg producer additional bargaining power. It is a volume price report, and unlike market reports which show only a price range. Our f.o.b. report shows the total volume sold and the number of percentages of the total which sell at each price reported.

Before the initiation of this report, f.o.b. prices in the Catskill area ran from 1 cent below the exchange price to the exchange or market price. At present it runs from market to 1 cent over the market. This improvement in the price range has spread to other producing areas of the State. It is well to keep in mind also that New York City quotations represent eggs delivered to New York City, and there is presumed to be an approximate transportation charge of 3 cents per dozen, whereas prices that we list are net prices at the farm.

F.o.b. prices quoted in the report include a range and a "mostly" price. The mostly price generally has a spread of 1 to 2 cents. This spread is due to the variations in prices paid to producers. These prices depend on many factors such as dealer outlets, product quality, and so forth.

Since issuing the report, we have concluded that there is no such thing as a single price paid for the same size and quality of eggs in any given area.

The quotation is a convenience and necessity for the New York City market and for dealers and others making payments to producers on a quotation basis. However, we cannot see that the quotation is of any advantage to producers in upstate New York who never ship eggs into the city.

We feel that our f.o.b. on-farm report meets the test of adequacy in that it lists prices for a considerable volume, along with demand. Last year we reported on 1,071,304 cases of eggs out of a total of approximately 4½ million sold in upstate New York. This volume was reported even though we issue reports on 2 days of the week only. Dealers, however, buy eggs the other 3 and possibly 4 days of the week.

The primary reason for starting the report and continuing it is to furnish a substitute for the exchange price if and when it is needed. There have been meetings with chainstore buyers and dealers who are willing to purchase eggs using a basic price other than that of the exchange. It remains, however, for someone or some group to take the initiative. As the sharp price fluctuations continue on the exchange, regardless of upstate conditions, more and more individuals in the trade are getting behind a movement to establish prices on some basis other than the exchange quotation.

Our volume-price report for eggs was initiated and developed as an Agricultural Marketing Act project and conducted with State-Federal funds. Without the use of Federal funds, this f.o.b. price report would not have been possible. In June of this year, the f.o.b. price reporting for eggs was officially turned over to our market news section as a regular service of the department.

We suspect that other northeastern States, especially those that have a multitude of small producers, have felt the fluctuations of exchange prices more than some of our own producers with their 20 to 80 thousand birds. If that is true, it would seem that they should help by attempting to report farm prices, or prices at some other level, to counteract the influence of the exchange quotation. In this way, perhaps, the egg pricing problem can be solved.

AGRICULTURAL TRANSPORTATION

Dewey C. Wayne
North Carolina Department of Agriculture

Transportation is defined as covering the systems and modes of conveyance of persons or goods from place to place. Agriculture involves the art or science of cultivating the ground, and the production of crops and livestock. In farming, any production over and above personal family requirements in some manner becomes involved with transportation. This may involve hauling by wheelbarrow to the next farm, or packing and shipping to destinations a few miles or thousands of miles away. Sales may be made at origin or on consignment to faraway places. Sometimes the determination as to destination is dependent upon market conditions and availability of volume or lack of volume at populous centers of consumption. There are times when products may be moved several times before final sale or disposition is consummated.

How and where to sell is a separate technical subject. Marketing is a complex art, becoming more complicated every day, and involving Government subsidies, Government loans, purchases, surpluses, storage, Government distribution, and foreign aid. Transportation is so big and important a subject it cannot be adequately covered in a few minutes, but certainly some of the facets may be briefly reviewed.

It is important to understand, however, that agricultural transportation becomes technically and legally involved with respect to sale and marketing, depending upon when the title to the product passes. There is a legislative and legal intent to make it easy to move products without restriction or regulation as long as the title remains with the farmer, the actual producer, but to clamp down and place rate regulations and other restrictions as soon as the title has passed from the farmer. There are, of course, exceptions to any general rule or mode of conduct. There has been a trend over the years to depart from the title aspect in order to permit nonregulation, regardless of title, of specific commodities. This came about primarily through many court decisions, many of them by the Supreme Court, others by district courts, and a few by the Interstate Commerce Commission and other regulatory bodies.

In North Carolina, coarse grain is one of many commodities that can be moved intrastate at whatever rate you may be able to induce some one to haul it for. On the national level, a list has been issued of nearly 600 commodities which are exempt from any but safety regulations during transportation by motor carrier. The railroads are now seeking legislation to remove these exemptions or, as an alternative, to grant the same exemptions for rail transportation. The common carrier truckers, too, are seeking a curtailment of exemptions in order to force traffic via their operations.

Agriculture is not only the largest but is the only industry that has been accorded some semblance of freedom from transportation rate regulation. This has been accorded by legislation, and I am sure you are familiar with the specific paragraphs in Part II of the Interstate Commerce Act dealing with agricultural exemptions and transportation by farm cooperatives.

I am quite sure that a long and detailed explanation is not required to convince anyone that nonregulated rates are ordinarily lower in ultimate cost than regulated. There is no accurate gage to determine the percentage of difference, but my personal experience has been that private or unregulated costs, in many instances, range from 37½ percent to 50 percent lower than regulated costs. Regulated carriers have labor problems and union scales, specific services to perform for one and all, certificates of routes to follow, reports to make, types of equipment not specialized for agriculture, and schedules to meet to fit all types of merchandise, which force their costs higher than those of the specialized agricultural hauler who is being hired and paid more nearly on the basis of supply and demand.

In a country as large as the United States, with its numerous areas of production, such as Florida, the Rio Grande Valley, California, the northwestern States of Oregon and Washington, all competing to sell fruit and produce in the more populous eastern States, it is understandable why agriculture itself has varying views, desires, and problems with respect to transportation. Whereas the southeastern States may be primarily interested in truck transportation, other areas may be more concerned with rail and even with air transportation for certain commodities. Conditions change with the years. One of the heaviest movements of grain from North Carolina is to Miami, Fla., yet we are buying tremendous quantities of grain from Illinois and the western States. A large amount of North Carolina produce moves to Montreal, Canada. There are several hundred growers of gladioli who grow their first crop in Florida and move north to our State to grow their second crop. An airline handles most of the Florida gladioli. I was impressed in seeing a cargo plane which flies daily from Miami, Fla., to San Juan, Puerto Rico, with a load of 5,000 loaves of freshly baked bread. I assume this is made from the North Carolina grain we ship down there. For a number of months, Georgia gets its produce from Florida. When the seasons change, the movement is reversed, Florida being served by Georgia.

In 1958, over 60 percent of all fruits and vegetables shipped to leading markets in the United States moved by truck. This average was 52 percent in 1955. If the rail movements from the West Coast to large cities such as Detroit, Cincinnati, Philadelphia, Boston, and New York were eliminated, the percentage would actually be nearly 85 percent by truck. To the 10 largest markets, all live poultry moved by truck, dressed poultry 95.6 percent, shell eggs 100 percent, and frozen eggs 96.6 percent. Of all the vegetables shipped from Florida, 71 percent moved by truck. The equivalent of 10,161 carlots of oranges moved from Florida by truck, as well as 8,626 carlots of grapefruit, and 1,375 carlots of tangerines. In 1958, 87 percent of all livestock receipts at major stockyards was by truck. I give you these figures to indicate to you how important exempt motor hauling is to agricultural marketing.

Bills are now pending in Congress which seek to curtail exempt agricultural hauling, as well as many other bills affecting agriculture. Should the railroads be permitted to buy or acquire motor lines and vice versa? Should piggyback transportation be restricted to the hauling of common motor carrier equipment, or should it be open to handle trailers for anyone at the same charge to all? Should piggyback be restricted to points on railroads, or could such service be extended to interior off-rail points? Should the railroads be permitted to take off all passenger service, or should passenger trains be subsidized by freight revenue? The National Grange has gone on record as approving the removal of passenger trains that do not bring in net revenue.

Agriculture has been riding fleecy clouds as far as transportation is concerned, but the clouds and bubbles are likely to break if agriculture does not organize and protect itself. Too many State departments of agriculture depend on their regulatory bodies to protect their agricultural interests, and claim they do not have the funds or staff to consider transportation adequately. I am afraid this is very shortsighted, because the interests of a regulatory body and a State department of agriculture are quite diverse. Attempts have been made to interest different States in transportation problems and some progress has been made in the South. In the southern States, they are acquiring part-time consultants when they cannot pay for a full-time staff member. We have a Transportation Committee in the South composed of representatives from 11 State departments of agriculture. Other areas should do likewise. The problems are national, although much can be accomplished locally. Grain rates in the South, and to and from the South, were reduced more than 20 percent a little over a year ago. The case is not yet complete; it takes years to effect general transportation rate changes, lots of cooperation, trained people, and, I must add, a certain amount of money.

So far, this discussion has briefly posed the problems, with little or no specific suggestions as to what might be done to solve them. In the last Congress, 49 bills affecting transportation were introduced, 7 of which actually became laws. There is pending, however, the introduction of further bills in 1960, many of which will appertain to agriculture and existing exemptions. Certain State regulatory officials are openly advocating rate regulation of agricultural transportation, principally on the alleged ground that marketing will be stabilized if definite and specific transportation charges are known in advance of sales. Unless a carefully prepared defense is formulated, I am fearful that today's seeming fool's paradise of agricultural transportation may collapse.

The National Associate of State Departments of Agriculture, the National Association of Marketing Officials, and the U. S. Department of Agriculture have all recognized this problem and have adopted resolutions or made recommendations that the individual State departments of agriculture either set up transportation units or assign the problems to existing staff members.

Getting down to the practical side, only 3 States now have specifically assigned transportation personnel--Wisconsin, Georgia, and North Carolina. A number of the southern States have assigned the matter of transportation to specific staff members working in other fields. This is helpful, but not so forceful as having competent individuals trained in the now highly technical subject of transportation. Many of our colleges and universities offer transportation courses and are graduating young men especially trained in this field.

Personnel in the technical transportation field is somewhat like personnel in the legal field--there are good lawyers, indifferent ones, and bad ones. You usually get what you pay for. The return is usually determined by the amount invested. Ordinarily, until programs are determined, part-time consultants of high caliber are a better investment than mediocre full-time employees. Part-time consultants must,of course, be paid according to the time and actual work performed. Some States offer about $150 per month, and others several hundred dollars per month or several thousand dollars per year. In addition to the salary, travel expenses are included, plus the cost of necessary tools such as trade journals, a few tariffs, and railroad and motor carrier association rate proposals.

In addition to checking proposed legislation and the rate changes proposed and docketed by the railroads and motor bureaus, certain analyses may be initiated.

The status of intrastate motor carrier exemption of regulation of agricultural commodities is quite varied. Some States evidently haven't looked at their own situation for years and are far behind Federal exemptions. It is not consistent to ask for Federal action and find that you do not have your own backyard cleaned up.

It is surprising to find how many States have never investigated their regulated motor carrier rate structure. If they did, they would probably find that their rural communities are far behind their populous industrial centers. Most of the motor carrier rates are predicated on railroad mileage. It may be 200 miles between points A and B by railroad, but highways may have been built which make the distance only 25 miles. The chances are the motor carriers are collecting rates for 200 instead of 25 miles, but they just don't seem to adjust until you call it to their attention.

New crops or new movements may develop, calling for new rates and service. The individual farmers do not know the procedure, so the State department of agriculture should be qualified to assist.

Most States have programs where freight bills require auditing, such as relief shipments, shipments of feeder livestock, purchase of seed, and surplus foods for school and welfare programs. It has been our experience that you can have a dozen rates from the railroads for the same movement between the same points, and if you can't prove to them what the right and lowest rate is, you are liable to pay almost anything and your State auditor will not catch it.

The State Granges, the Farm Bureaus, and other agricultural associations help mold the policies of their national organizations. All of these need and deserve transportation advice from their State departments of agriculture. Many of the railroads maintain agricultural departments.

The field of service in transportation is unlimited, and it is surprising how such an important element of marketing appears to be constantly bypassed. We have many experts employed in perhaps lesser important fields and degrees of specialization. I suggest that your return on investment will be high if you will give this important subject the consideration it deserves.

IMPROVING WHOLESALING AND RETAILING EFFICIENCY

Ernest L. Wermuth
New York Department of Agriculture and Markets

Anyone who has ever had the opportunity to sit and chat with Dr. Ray Hoecker of the U. S. Department of Agriculture has no doubt had the opportunity to become acquainted with the importance of working to improve retailing and wholesaling efficiency as a contribution to our agricultural economy.

I think Dr. Hoecker put the whole story in a nutshell at the 1956 marketing workshop in Peoria when he said, "Any reduction in the cost of marketing agricultural products from the time they leave the producer is reflected, in the long run, to the various claimants in varying proportions. Their final share is determined largely by the elasticity of the demand for the product and the degree of competition in the marketing channel. Research at the retail level, which is the final step in the marketing process, is just as effective in increasing returns to producers as research in the assembly markets."

Certainly there is enough implication in these words to justify considerable action by State departments of agriculture in the field of improving retailing and wholesaling efficiency.

Savings of this sort, however, are extremely difficult to pinpoint in view of the fact that they are immediately absorbed by consumers, retailers, wholesalers, and producers--in different ways and in varying proportions. But anyone working in agriculture is fully aware of this difficulty. As a very general and broad rule of thumb for any State, we might establish as an ideal goal a saving of $1,000 per year for each supermarket in the State--if produce handling efficiencies were implemented in each of these stores.

The important question is, "What do we do to get this thing started?" I think it will be more practical to cite our own experience as an illustration, rather than attempt to tell you how to get your program started.

Our introduction to a retail operations program came about while we were toying with the idea of holding a produce clinic for retailers. In the midst of our fumblings, the Liaison Office suggested we contact Dr. Hoecker for a little professional advice and guidance. In talking with Dr. Hoecker, we found that a training session in retail operations research was to be held for U. S. Department of Agriculture recruits and we were welcome to attend. Fortunately, we were able to send two market service representatives. There's no need to outline the subjects that were covered during this intense training session, but I would like to emphasize the fact that, upon graduation, there was a definite sense of accomplishment and also a feeling of greater self-confidence.

After the application of this "fine-edge" training at the retail operations school, which was conducted by Dale Anderson, we resumed our initial request to conduct a produce clinic for New York State retailers. This time, in cooperation with the New York Extension Service, we were able to make our proposed retail clinic a reality and the session was held in Syracuse in 1957. U. S. Department of Agriculture specialists who conducted the school have been praised many times over for the excellent job they did, and retailers have been profusely grateful. For our staff, it served as an introduction to retailers and indicated a formal acknowledgment by the U. S. Department of Agriculture that our services were available and could be wisely used by retailers.

Nearly every contact we have made with retailers in the line of efficiency projects can be directly traced back to the produce clinic held in cooperation with the U. S. Department of Agriculture. I cannot emphasize too strongly the importance of the initial impact of meeting retailers arm in arm with the U. S. Department of Agriculture. And we've got to admit that we were probably able to get our foot in the door due to this association.

Since the original few contacts, however, we can say we were able to sell ourselves and the services we had to offer. So now, with this important basic knowledge and understanding established, we can move on to the actual work with retail organizations, namely, the chains.

I might point out that there are advantages in working with corporate and voluntary chains, for the simple reason that you can get considerably more mileage out of every dollar and man-hour spent. A trial or demonstration study in one store of a chain results in use of these improvements as a pattern for implementation by the chain itself in other stores.

I mentioned the door-opening influence of the U. S. Department of Agriculture. From this introduction, the next step is to meet with policy-making personnel of the chain to explain the purpose of the project and obtain complete approval and cooperation.

I can't emphasize this last point too strongly. Without the sanction and wholehearted cooperation of top-level management personnel, you may find yourself out on a limb. Contrary to this, however, successful clearing of this first hurdle makes the rest of the project considerably easier.

From this point on, it is possible to work with produce supervisors or produce merchandisers to select a store for the demonstration. Once the store has been selected, a thorough study must be made, to become fully acquainted with its operations. At this stage, it is again important to emphasize thoroughness, because the completeness of recommendations and evaluations submitted enhances the degree of cooperation received from management.

In our projects, we attempt to be as specific as conceivably possible. Scale drawings and written recommendations, including cost estimates, are forwarded to management for consideration and approval. We have learned from experience that there are no short cuts in preparing the basic data. With complete recommendations, management is able to evaluate the proposed changes intelligently and quickly, thus avoiding possible delay in initiating the program.

As an example of this quick action, and how it can help make a "lucky break,"the following happened on our first try at initiating an efficiency program for one store in a chain.

In going over our recommendations at a staff meeting, the general manager spotted one of our suggestions that saved $100 by eliminating a hot water heater in the produce backroom renovation. It just so happened that plans for 5 more stores were on the drawing boards, and the general manager immediately deleted water heaters from the yet-to-be-constructed stores. This one item saved the chain at least 600 tangible dollars, and, needless to say, the rest of our proposals received full and careful study.

During the first few years of establishing the importance of this work, and indeed establishing ourselves and the services we have to offer, we feel it is important to complete the job. By this I mean going back and working closely with store personnel to put into practice what we have preached.

While the improvements are being initiated in the produce backroom, we again run into the subject I mentioned before--the importance of having the complete cooperation of the people you are working with. Although these folks, by definition, are lower in the chain of command than management, we have found that without cooperation at this level also, it is easy to be right back out on a limb. Without the confidence and respect of all store personnel, from the manager to the checkout clerk, you are faced with an impossible task.

Then, too, we found that it is almost impossible to maintain a schedule you have worked out. Such things as holiday rushes, commodity specials, seasonal fluctuations, and personnel problems like sickness, vacations, and transfers are completely unpredictable. From this it follows that in many cases it is necessary for market service personnel to work evenings, weekends, and holidays. And other small matters crop up that provide ample justification for the saying, "The best laid plans of mice and men ..."

One such example might well be cited to illustrate this point. We had just about completed the redesigning of a produce backroom in one store, when the gas meter, for some unpredictable reason, decided that it was time to retire. Of course, in our absence, a new meter was immediately installed. The original meter was somewhat dated and the newly installed meter was of a more modern design that would hardly fit the area we had designated. Therefore, our "best-laid plans" had also gone astray.

At least, at this time of the installation project, we are coming down the home stretch, but we find that this is hardly the place to stop. The efficiency methods and equipment that have been installed must be explained in full to the persons who will be using them. And this is not always an easy task.

We were recently faced with the situation in which the produce clerk was not able to cope with the new methods, or the old methods, as a matter of fact. And it was impossible for us to show that our installation and our methods were making any appreciable improvement in the backroom operation. Until we were able to point out the clerk's deficiencies to the produce supervisor, we were in a rather embarrassing situation.

We don't expect to run into this sort of thing often. However, it is an important point to remember. Generally, we have found that store employees are appreciative of the change once they catch on to it.

In one store where our demonstration was installed, the chain management reported almost double the produce output from the same number of produce personnel. In another instance, we were called in as consultants to oversee the installation of efficiency equipment in a chain's largest store. In other cases, new chains have requested assistance, and we have also seen our projects carried out in additional stores where we had laid the groundwork for development through a demonstration project.

It has been especially gratifying to know we have been accepted and are recognized as a reliable source of information and action in the field of retail efficiency programs, as a positive step towards reducing the cost of marketing agricultural products.

MARKETING TIMBER

John Stiles
West Virginia Department of Agriculture

West Virginia ranks seventh nationally in the value of standing hardwood saw timber, with 64 percent of the State land area occupied by forests. All of our 55 counties are occupied with forests to some degree, ranging from 18 percent in Jefferson County to 90 percent in Boone. Thirty-six counties are better than 50 percent forested, and 16 counties more than 75 percent. Realizing our future of this position, we have been working the last 2 years to get a timber marketing program under way in connection with our marketing service work.

During its last session, the legislature was impressed with our problem and made $10,000 available to Commissioner Johnson to be used in starting some type of program that would help our farmers and woodlot owners.

After holding several meetings and conferences over the State, we felt the time was ripe to hold a general meeting and invite all segments of the industry to attend. Such a meeting was called by Commissioner Johnson and the following groups were invited to attend: State Soil Conservation Committee, State Department of Agriculture, State Conservation Commission, USDA Forest Service, West Virginia University, West Virginia Extension Service, consulting foresters, industrial and agricultural foresters, farmers, woodlot owners, and all other persons interested in the program. At this meeting, Dr. A. H. Van Landingham, West Virginia University, presided.

The Conservation Commission reported on the marketing problem within the State. West Virginia University reported on some of the research being carried on and on some of the publications that will be printed in the near future. The West Virginia Department of Agriculture reported on a proposed timber marketing program. This report included the following:

"The proposed timber marketing program is designed to enable West Virginia's woodland owners to market their timber in keeping with accepted forest management practices. Timber offered for sale will be cruised by foresters, and the data covering species, volume, and grade will be made available to buyers. Generally, it will cover several woodlots. Sales will be on a contract basis with a 10 percent down payment required.

"Logging operations and marketing arrangements will be handled by a local group such as a soil conservation district. The district will be assisted by the Marketing Service of the State department of agriculture in contacting buyers and making sales.

"1. Organization: This could be a soil conservation district. Should this be the case, the district would be expected to ...

- a. Enforce the required rules and regulations.
- b. Enter into agreements with woodland owners who want the services of this program.
- c. Employ a logging crew to do selective cutting.
- d. Supervise or employ a supervisor of a logging crew, build roads, and harvest timber.
- e. Use equipment available and purchase other equipment as needed.
- f. Deliver the logs to a shipping site and load on cars, if necessary.
- g. Establish wages for personnel and rates for the use of equipment.
- h. Maintain a payroll.
- i. Collect payment for timber, use of equipment, and commissions.

"2. Timber cruising, reforestation, and woodland management

- a. Make a timber cruise of woodland areas covering species, volume, and a general statement as to quality of the timber to be marketed.
- b. Mark timber to be harvested by selective cutting.
- c. Lay out roads with least damage to the timber and easily accessible for logging.
- d. Supervise selective cutting.
- e. Measure and grade saw logs (Doyles or International Rule).
- f. Give assistance in protecting, replanting and management of farm woodlots cooperating with the program.

"3. Marketing timber

- a. Establish a list of buyers, local and distant, determine their needs as to species, volume, preferred size of logs, the various uses they have of the logs, quality desired, what season of the year their operation is the heaviest and a financial statement of their operations.
- b. Advise buyers of available timber from cooperating woodland owners covering volume, species, approximate location, statement concerning the grade as near as possible if they are interested in making a purchase, and how contact can be made with a marketing agent.
- c. One person shall have complete control of selling all the timber.
- d. Require the buyer to sign a contract, make a deposit of 10 percent of the total amount, and pay balance when the harvesting operation starts.
- e. Make a list of sawmill operators who could pool operations to supply volume required by the buyers.
- f. Ascertain if buyers would prefer to pay for skilled local crew to harvest and load logs for them.
- g. Market the timber so that the various species will go to their best uses (veneer for veneer logs and not for railroad ties).

h. Work with sawmill operators, pulpwood companies, charcoal plants, etc., on timber uses.

"4. Publicity and market newsletters

a. Inform woodlot owners through newspapers and interested organizations of the timber marketing program.
b. After sales have been completed, prepare a market newsletter as to grades, species, and prices received.
c. Inform the public of the volume of the West Virginia woodlands and our present timber uses.
d. Encourage new woodworking plants to locate in our State.
e. Work with all publicity agents within the State to promote West Virginia hardwoods.
f. Help to develop new uses and new ideas for the utilization of West Virginia's hardwoods."

At the close of this meeting, a committee was appointed by the chairman to represent all of the agencies present. A meeting was held later to try to formulate a definite program that we could get under way and the following points were agreed upon by the committee members present:

1. West Virginia Department of Agriculture would collect and disseminate market information on species, grades, and current prices of logs and lumber. This would be done through a market newsletter which would be prepared and mailed out quarterly. The department would also compile a list of timber and lumber buyers and gather information as to volume, species, grade, and desired length of logs and timber necessary for their operation.

2. West Virginia Extension Service and the Conservation Commission would make a report available to sawmill operators and buyers on information on marked timber, timber stands for sale, wants of sawmill operators, and educational and timely tips to forest management and marketing.

3. The West Virginia Conservation Commission and the West Virginia Extension Service would organize sawmill operators by selecting 15 or 20 of the average operators to make up a nucleus to work with. It was felt that a formation of a statewide sawmill operators' organization through an educational program could definitely strengthen the industry.

4. A pilot area was selected in the Southern Soil Conservation District where a logging crew would be employed, their equipment used to do the actual logging operation, and the county forester would mark trees for selective cutting and work with sawmill operators in setting up a marketing program. This pilot operation has the blessings of the committee and all assistance that can be given to it from the other organizations will be given to it.

We are very much enthused with this matched fund project and also the spirit of cooperation that we are getting from the other agencies throughout the State. We realize that this program has more potential than any other marketing venture we have ever tried. If we could be successful in raising the price of one tree on every acre 50 cents, it would represent $4.5 million of new money coming back into our State. With this potential, we feel we must all work very deligently in making a successful timber marketing program in our great State.

POULTRY PROCESSING

R. J. Park
Tennessee Department of Agriculture

The enactment of the Federal Poultry Inspection Law has brought additional problems at the State level. These problems must be dealt with expediently if our intrastate processors are to stay in business. Lack of trained personnel at the State level has and is hampering the progress of our State poultry processing and sanitation improvement programs. Many small operators would like to discuss their problems with representatives of the U. S. Department of Agriculture inspection service to determine whether or not the improvements required under the Federal Poultry Inspection Law will cost too much to improve their particular business.

Our working relations with the Agricultural Marketing Service have been excellent. Our State inspectors make routine inspections of our poultry and egg processing plants. Inspection reports of the sanitary conditions of the entire plant are sent to our office. When the report shows a need for improvement in facilities, building, or equipment, we go to the plant, observe, and actually participate in the operation. This gives us a better idea of the improvements needed in the plant. When some major improvements such as remodeling or construction of buildings are needed, we call for assistance from the Transportation and Facilities Research Division of the Agricultural Marketing Service. We submit a scale drawing of the present plant layout and suggest alterations or additions that we feel necessary for economical and sanitary operations. In turn, the Transportation and Facilities Research Division studies these plans and makes recommendations. When necessary we request a representative from that Division to visit the plant under consideration. This affords an opportunity for firsthand information to all parties concerned.

The Transportation and Facilities Research Division makes detailed drawings of plants and also gets them approved by the U. S. Department of Agriculture Inspection Branch before sending a copy to the State representative and plant owner. We make a followup visit to each plant as soon as we receive a copy of the drawing and recommendations.

This type of service has already meant much to Tennessee, and we expect it to be of greater service in the future.

GOOD PUBLIC RELATIONS AND HOW TO OBTAIN THEM

Louis H. Wilson
National Plant Food Institute

Improvement of your information programs in the State departments of agriculture is the first step to obtaining and improving good public relations. Good public relations are no better than your informational programs. Or, to put it another way, until your services are recognized and appreciated for what they mean to farmers, industries, and the public, your public relations are in poor repair.

To paraphrase a cliche, good public relations begin at home.

The first step is an office of information within the State department of agriculture, staffed by competent personnel and given divisional status.

Some time ago, I had the good fortune to appear on the program of the annual meeting of the National Association of State Departments of Agriculture. I asked the members present how many had informational departments or employed directors of information. A scattered number of hands were raised.

In my opinion, optimum results and effectiveness in the field of regulatory and service work cannot be attained without understanding the aims, purposes, and benefits of such work. Effective communications are indispensable tools to help you do your job better.

A number of years ago, Dr. Earl L. Butz, Dean of Agriculture at Purdue University, gave me the best definition of good public relations I have found anywhere. He said that "Good public relations is living right, and getting credit for it."

Personally and professionally, I certainly share the view that, in terms of service to agriculture, to industry, to farmers, and to consumers, our State departments of agriculture have been "living right" but have not always been "getting credit for it." By the same token, I most certainly believe that the American farmer has not been given credit for the magnificent job he has done in contributing to our high standard of living and in providing the American consumer with an abundance of nutritious foods at low costs. If you are to enjoy good public relations, then you must concern yourselves with the poor public relations, undeservedly poor public relations, that characterize the American farmer.

Perhaps improvement of public relations in marketing offers one of the greatest opportunities for better understanding of the important functions you perform in the public's interest. Let me say that I do not know of a function in a department of agriculture that is not related or that does not contribute to the economic wellbeing of our Nation.

We have spent millions of dollars making two blades of grass grow where one grew before, but we have spent pennies marketing the second blade. I do not say that we should not have grown the two blades, or even three blades of grass, for low per unit cost of production on the part of the farmer is responsible for the high standard, not the high cost, of living we enjoy.

Most of us will agree that substantial contributions could be made to solve the problem of so-called superabundance of food if our marketing programs were more effective. By promoting a better understanding of standards and grades, alone, you and your information staff could make a great contribution to better public relations for yourselves, agriculture and the consumer, whose opinion largely determines the kind of public relations you enjoy.

The other day I picked up a bulletin in the United States Department of Agriculture, entitled "A Consumers' Guide to U. S. Standards for Farm Products." Let me read you the first two paragraphs from the bulletin:

"Consumers always want to get what they pay for, and usually want to know what quality they are buying. When prices are high, they are likely to give more attention to quality than when prices are low. The Federal standards are a reliable index to quality and a useful guide to home-makers in buying food.

"The official United States Standards for farm products were worked out primarily for producers and distributors; but, in accordance with the principle that any well-rounded farm program must take consumers and their preferences into account, the United States Department of Agriculture is carrying these standards to consumers on a number of projects."

Notwithstanding the effective work being done by the State departments of agriculture in the field of marketing alone, I'll venture to say we have not "scratched the surface." At the risk of appearing contradictory, I would like to make the observation that American agriculture owes a great deal to the American food processors, for they have built in maid services and have presented food in an attractive manner--food that otherwise might be piled in the storehouses rather than used in the kitchens of the Nation.

Certainly, no nation in the world is better equipped with media for telling the marketing story than the United States, and there is no exclusive medium for telling the story to the consumer. They all are important. In getting across the message of better marketing, the story of regulatory and service work, the contributions of the American farmer, and the better public relations you deserve, again I would like to emphasize that trained personnel must be employed to do the job.

As we approach the problem of improving public relations, we must be mindful that the general public is not particularly interested in the woes of agriculture as such. They are interested in how the problems of agriculture affect their pocketbooks.

The philosophy of many consumers, in my opinion, can be described in the words of the late Senator Alben Barkley: "What have you done for me lately."

So, if we are to promote better understanding by the consumer of the problems of agriculture, we must convince the taxpayer, the consumer, that sound farming policies, continuing agricultural research, adequate regulatory and service programs in our State departments of agriculture, and a strong land-grant college system have a direct relationship to the cost of food and fiber.

The poor public relations position in which farmers find themselves is not consistent with the facts. Each industry that has farmers as customers and an interest in the wellbeing of farmers must share the responsibility of presenting the true picture. For example, great emphasis is being placed by many on the fact that farmers represent a relatively small group in our economy and, therefore, are not as important as they once were. That's fallacious reasoning of the first water. True, farmers represent only about 10 percent of our population, but how many know that 4 out of 10 workers in the United States are employed in agriculture and related industries; that out of 62 million workers, 25 million are in agriculture and related industries; 10 million work on farms; 6 million produce for or service farmers; and 9 million process or distribute farm products? In addition, 250 thousand scientists are working on projects related to agriculture.

How many know that the average value of assets per farm is $41,500; that the investment per paid worker on farms is 3 times as great as the investment per production worker in manufacturing industry--$25,000 compared to $8,000.

Farmers are one of the biggest customers of industry. They use 50 million tons of chemicals annually, enough steel each year to manufacture 4,300,000 automobiles, enough rubber each year to put tires on 6 million cars; and agriculture buys more petroleum each year than any other industry.

Notwithstanding his importance to the wellbeing of the Nation, the American farmer is a greatly misunderstood man. He has a good story to tell, and the story needs telling.

Most of us concerned with agriculture or its problems either have not had the time or the inclination to delve into the public relations position of the farmer. The farmer's story is fascinating, and replete with achievements.

Until agriculture is evaluated in terms of its importance to the economy, instead of by percentages of population, the American farmer will continue to be misunderstood and unappreciated for the contributions he has made in keeping the United States the best fed, best clothed, and best housed Nation in the world.

All of us have a responsibility, if not an obligation, to tell the story of agriculture and to point with pride to the many contributions the American farmers have made in upgrading our diet and in giving us a standard of living which is the envy of the world.

But we cannot become complacent, for efficiency in American agriculture still leaves a great deal to be desired. If you will pardon me for using the industry that I represent as an example, the sad fact remains that most farmers are using less than half as much fertilizer as their experiment stations say they could use profitably.

The "public relations doghouse" in which most farmers find themselves is still a challenge to us, and I would like to give you some ammunition with which you can dispel the fog surrounding agriculture today.

We can point with pride to the fact that today one farm worker, working shorter hours, can grow food for about 23 people, compared with 11 in 1940. This represents a gain of 115 percent in efficiency in 19 years.

Today farmers are producing bountifully for a population 32 percent greater than in 1940. They are producing nearly 50 percent more products on virtually the same amount of land they farmed before World War II. Most folks don't know that corn yields are up 82 percent; wheat, about 78 percent; cotton about 86 percent; and potatoes, over 125 percent. Each cow is giving 37 percent more milk; and each hen is laying over 70 percent more eggs. I need not emphasize that these achievements contribute to our abundant living.

Here are the views of a distinguished midwestern Dean of Agriculture:

"Not only do we get our foodstuffs in America with much less time spent earning it, but we eat more and better foodstuffs than ever before in our history.

We're all 'eating higher on the hog' and enjoying it tremendously. And it doesn't cost us very much to do it, either. The thing that bothers most of us in America today is not so much the high cost of living as it is the cost of high living.

"Foodstuffs come to the average American at bargain prices because research and education have made it possible for our great agricultural industry to produce in such abundance and so efficiently."

Let's take a closer look at our standard of living and the man who largely has made it possible, the American farmer.

Wages paid for an average hour of manufacturing labor will now buy some 32 percent more food than an hour's wages would buy in 1939. And, not to be redundant, look at these facts: Wages for an average hour of manufacturing labor currently will buy 38 percent more bread than it would have in 1939, 11 percent more round steak, 62 percent more milk, 53 percent more butter, 75 percent more eggs, and about 27 percent more oranges. And, would you believe it, there are those who think the farmer is getting rich.

In 1948, out of every dollar the consumer spent for food the farmer received 51 cents; his share today is only 36 cents. Here's irrefutable evidence that the farmer is not getting rich.

I wonder how many consumers realize that the hard-working dairy farmer receives less than one-half of the 24.5 cents for a bottle of milk, or that the wheat farmer receives only 2.4 cents of the 19-cent loaf of bread, or that the wool grower gets only $5 out of a $50 suit.

One of the best self-serving declarations in the interest of good public relations made in recent years came from Dr. Byron T. Shaw, Administrator of the Agricultural Research Service, U. S. Department of Agriculture. He said that if farmers had farmed in 1950 as they did in 1940, without making technological progress during those 10 years, the consumer's annual food bill would have been $10 billion a year more in 1950 than in 1940.

According to the best estimates we can get in our organization, if farmers farmed today as they did in 1940, using the same amounts of fertilizer, the same kinds of insecticides, the same kinds of equipment, and the same practices, the consumer's food bill would have been nearly $13 billion a year higher than it currently is.

In relation to wheat and bread prices, our daily bread is quite a bargain. Here are the facts: In January 1948, farmers were getting $2.81 per bushel for wheat and consumers were paying 13.5 cents for a 1-pound loaf of bread. By January 1955, the farmer's price had dropped to $2.14 per bushel and the consumer's cost had climbed to 17.6 cents per loaf. And by January 1959, the farmer was getting only $1.71 per bushel for wheat, and the consumer was paying 19.6 cents per loaf for bread. Thus, between 1948 and 1959, wheat prices dropped 39 percent and bread prices increased 42 percent.

The examples I have given you of the vast contributions farmers have made to the Nation's economy are but a few of many facts that could be presented to improve their public relations position, and your own public relations.

My enthusiasm for doing a better public relations job for the American farmer may have led me astray from the major interests you have in the field of marketing. Maybe I can say that I have stayed within the bounds of marketing the truth about agriculture, and I feel strongly that you can do something about this problem.

Someone has said that "public relations is not the art of applying whitewash, it is not the business of alibis and intrigue, it is not the business of high-pressure propaganda...they don't produce lasting results."

You who are concerned with marketing and with the welfare of agriculture are rendering a great public service, and, unfortunately, great public services sometime need a spokesman. As long as you depend upon tax money and inspection fees for your revenue, you will always have a small segment of people who do not understand and who need reasons and explanations for what you are doing.

You, too, have a good story to tell, and I hope you will lend your influence toward procuring the necessary informational personnel that will make your projects and programs appreciated in ratio to the contributions you are making--contributions that make our United States a better place in which to live.

WORKING WITH INDUSTRY IN SOLVING MARKETING PROBLEMS

Gerald E. Zich
New Jersey Department of Agriculture

Dissemination of information, as an aid to those who work with industry in solving marketing problems, is considered an important function in the setup of the New Jersey Department of Agriculture.

For nearly a quarter of a century the department has conducted a communications and information program calculated to create a climate of relationships and understanding in which agriculture might live under what are perhaps the most difficult circumstances of high costs and urban encroachment to be found in the United States.

We have six principal divisions, Administration, Markets, Plant Industry, Animal Industry, Milk Industry, and Information (which includes Farm Products Promotion).

We provide the following informational and promotional services:

(a) Regular mimeographed news releases to 43 daily and 73 weekly newspapers. Last year we issued a total of 293 individual news releases to these 116 newspapers, principally covering department services; activities in cooperation with organized commodity groups; announcements of regulations, hearings, and penalty actions for violations of our agricultural laws;

conferences and meetings; notices of the publication of circulars; appointments to the staff, to the State board of agriculture, and to the various advisory councils and committees--the "citizens' participation" system of agricultural government we have in New Jersey; releases summarizing the talks given at the 60 commodity group meetings held in connection with our Farmers' Week; digests of the papers presented at our Marketing Institute; news resumes of our promotional activities; news releases which in themselves are promotional because they tell about the availability of our products, their condition, and harvest volume indications; interrelated activities with the Federal Government agencies and State agencies; and a great miscellany of information in which State agricultural government has a part or is concerned.

(b) Special feature articles for daily and weekly newspapers, trade papers, and farm magazines which, in greater detail than our routine news releases, report our activities and services, and tell what these mean to the producers, distributors, and consumers. Such features are usually illustrated, sometimes using department photographs, more often pictures specially made by the newspaper and magazine photographers. We encourage all members of our staff to capitalize upon all informational opportunities and to work with reporters and editors, although frequently we have to provide the opportunities and guide the development of their articles.

(c) Photographs are supplied to any publication which requests illustrative material. Last year we supplied newspapers, magazines, and television programs with 1,077 news photographs of 70 different subjects related to our work or to farming in New Jersey. We also have a number of rural newspapers, a list of 40, which use "mats" (properly matrices, an inexpensive means of reproducing photographs), and we issued 27 mat releases to these newspapers. These 40 rural weeklies have a relatively small circulation (the largest has 11,000 readers), but they are extremely important in our communications line, especially to farmers, and the publishers are most appreciative of our service.

(d) We have dabbled in radio for years, of course, having staff members appear as guests whenever an opportunity was offered (or when we could set up an opportunity), but our people didn't like the extra work enough, and our most capable "mouthpieces" carried such heavy loads we could not divert them to radio programs on any sustained basis. About 2 years ago, an organized radio project was developed, with an experienced man combining technical and creative abilities. We now have a "rural radio network" of our own, with 15 stations using our weekly programs and the same number broadcasting Secretary Alampi's monthly report. These programs cover just about the same variety of informational subjects that we cover in our mimeographed news releases. The radio stations are asking for more service from us, such as special localized programs in addition to our routine "network" tapes. Incidentally, some of the radio stations in our State, and perhaps yours, are up for renewal of their FCC licenses, and their "public service" programs are important in their records. There are about 3 relatively easy and inexpensive types of public service radio programming, religion, education, and agriculture, and our development of a State department of agriculture radio service at this time is opportune and effective.

(e) "New Jersey Farm Service News," our house organ, has been published continuously, 6 times a year, since 1925. It's a well-illustrated, well-written, well-printed 4-page link between our activities and services and about 17,000 readers who include allied industry people as well as farmers.

(f) New Jersey has a very capable and enterprising State farm magazine, and, since its founding in 1930, "New Jersey Farm and Garden" has opened its pages to our department. One page is dedicated monthly to the editorial of the Secretary of Agriculture. Department services and our activities, particularly in solving marketing problems, are reported on other pages. We never abuse the editorial courtesy extended by our State farm publication, but we use it regularly and effectively to communicate with our farmers and allied industry. We also provide service to the regional farm magazines, with which we enjoy good relationships.

(g) Food publicity. This started in New Jersey around 1935 with a milk information program. Milk publicity included companionate and compatible foods. Food publicists, always cooperative, asked for more information. Emulating commercial organizations seeking food page publicity, our department and cooperating commodity groups staged tours and eating affairs at which publicity was planted in a "party atmosphere." Much planning and relatively large amounts of money were required. The usual turnout is 50 to 100 food publicists, editors, radio and television personalities, home demonstration agents, and public utilities agents. We get good immediate results in food columns, and on radio and television programs. But the long-term benefits of friendly relationships--the accumulated dividends of many years of these "play party" meet-and-eat affairs--are the real payoff. The ladies, writers and speakers and demonstrators on food uses, cooking, and nutrition, seem to enjoy visiting orchards, henneries, and farms; meeting food producers and their wives, picking sun-ripened peaches from a tree, or gathering eggs, or even trying to milk a cow. Weeks and months later, when we need help from them, even on some problem quite unrelated to the tour or original purpose, we get column space and radio and television time on any deserving and proper request for help. We never abuse our privileges of the personal friendships developed as a result of the "party atmosphere" affairs.

(h) Commercial alliances. A dozen major industries in New Jersey are deeply concerned with the welfare of our farmers, and hundreds more of our manufacturers, public utilities, and businesses are at least conscious of their dependence and interdependence on agriculture, or sympathetic to our needs, or perhaps patriotic. For a quarter of a century or more, the State chamber of commerce has had an agricultural committee which sponsors several activities for agriculture, such as an industrial tour for farmers, with a return visit in which our industrialists tour outstanding farms and agricultural processing and marketing facilities. The State chamber of commerce is a co-sponsor of our annual Baby Beef Sale, and also gives us invaluable assistance in legislative problems and in a dozen other ways.

Many instances of cooperation can be cited in which the public utilities companies aided our informational program. For example, next week every newspaper in that large and populous section of New Jersey which is served by the Public Service Corporation will carry a big advertisement about New Jersey agriculture--an ad in which consumers are reminded to give thanks for the fine and bountiful products of the farms of our Garden State. Our electric and gas companies issue bulletins regularly to homemakers, and when we are pushing some commodity--as during March Egg Month, June Dairy Month, or Apple Week--they devote entire issues to promotional information and recipes. They have large staffs of demonstration agents who, supplementing the work of the extension service, are cheerleaders for our team. The public utilities agents have more freedom of action than the government workers, and are permitted to be more forthrightly promotional.

Our New Jersey Bell Telephone Company is also behind our efforts. As an example, with each monthly bill, a small publication, "TEL-NEWS," is enclosed--going to 1½ million phone subscribers. One paragraph about one of our products, given such wide circulation in such an intimate manner, is a true pearl of rare price. During the past year New Jersey Bell gave us "free plugs" for our eggs, milk, blueberries, peaches, apples and honey.

We have encouraged several county boards of agriculture to stage public relations affairs, and at least 2 counties have well-planned annual farm tours and dinners for editors from the counties and nearby cities, radio and television personalities, and representatives of the food distribution industry.

(i) Meetings. New Jersey Department of Agriculture staff participates in several hundred farm group and food industry meetings a year. Many of these are set up by the staff, or we provide the meeting place and a staff member acts as host. In other meetings, we take part as speakers. The more important speeches are released to newspapers, either locally if the subject is of local interest, or statewide. Specialists on the staff prepare speech material for the Secretary of Agriculture, the Governor and legislators, members of the State board of agriculture, and industrial leaders. We relate the subject matter to the department's official programs and policies, of course, because that's the business we're in, and usually the audiences are greatly interested in what we are doing, our objectives, and our progress. In addition to the Secretary and Assistant Secretary of Agriculture, we have several competent speakers on the regular staff, and there is a considerable demand for their services. The State board of agriculture members are selected geographically as well as by commodity groups, and they function as ambassadors and spokesmen for the department at hundreds of countrywide, statewide, and regional meetings, and speak before service clubs and at many special events for businessmen, industrialists, and consumers. We have never set up a "speakers' bureau." The present informal arrangement has worked pretty well for years.

(j) Reports. The department makes two major reports a year. There is the calendar-year report to the State Agricultural Convention, and the fiscal year report to the Governor, Legislature, and general public. Our last calendar-year report was 24 mimeographed pages, extremely condensed from about 250 pages originally submitted by the 6 divisions. The fiscal year report is printed, and usually runs to about 150 pages.

Progress reports are issued annually and also seasonally by the 4 farm products promotion councils, and are mailed to all who pay the special taxes and all county agents, farm leaders, and allied industry people.

GAINING PUBLIC ACCEPTANCE OF MARKETING WORK

William L. Henning, Secretary
Pennsylvania Department of Agriculture

For my remarks in the next few minutes to be clear, we must define the terms I shall use and understand the frames of reference in which I shall be speaking.

By "marketing work" I mean marketing programs. I believe that we must use this definition to avoid being trapped into a narrow channel of activities concerning one or two phases of the entire marketing system or a single commodity.

Secondly, we must presuppose that a State department of agriculture or other affected agency has in operation a marketing program. We also must assume, to a great extent, that we have developed staffs and budgets, since, as you will soon see, a marketing program is largely sold by the success of the program itself.

First of all, let us ask ourselves: Why must we have acceptance of a marketing program? Five reasons come immediately to mind; four of them positive, one negative. They are: Self-esteem, financial support, cooperation from other affected agencies and individuals, attraction of talent, and the ability to minimize adversities.

First, self-esteem of the persons working in marketing is vital. To make the program work, they must know that what they are doing is important, necessary, and desirable. In other words, they must have high morale and self-confidence. Within our organizational framework, through staff meetings, internal publications, and word of mouth, we can instill this self-confidence and high morale in our employees. But, let us remember, in many phases of a marketing program, these staff members are almost constantly in the field, away from our words of encouragement and praise.

If the program does not have general acceptance, especially of that great public body called "the trade," these men will be constantly exposed to "knockers" who will, through sheer weight of numbers, tend to destroy the morale of the worker, making him less efficient, discouraged, and ineffective.

Second, we must have financial support for marketing programs. This support must, in most cases, come from more than one source. It may come from industry, from governmental appropriations, from agricultural producers, or from private businesses. I deliberately include private businesses and industry, since by industry, most of us think of corporate giants which frequently require a completely different approach than the private businessman.

When matching fund programs are in operation, it is to the advantage of both parties to work together to their mutual benefit. Any of these prospective sources of funds for a marketing program must feel that the program is good, that it justifies further expansion, that it has a good record, and that competent people are administering it.

Third, the same factors are true when seeking cooperation from other parties who may be related to the marketing program in force or contemplated. Often this cooperation is only in lending moral support to the program, but even that is hard to obtain if the program does not have the acceptance needed.

Fourth, marketing programs, the same as is true of almost any other human endeavor, are completely dependent on ideas, sound thinking, intelligent analyses of situations, and initiative to take advantage of situations. The men with such talents are in constant demand. To get and keep such men on marketing staffs requires that the program be accepted.

And last, as I said before, there is a negative reason. We can minimize adversities. If the program has broad acceptance, public strength and confidence, detractors will be lost in the crowd of well-wishers. How often we have seen fine programs, but weak in public acceptance, destroyed by a single loud and strident voice? This we must seek to avoid by building and keeping public acceptance of our marketing programs.

How do we do this? Just exactly how should we go about creating a climate which will allow public acceptance of marketing programs to grow and bloom? One of the first steps, I think, is to define our public carefully. Economists, sociologists, and public relations men have coined the word "publics" to define the homogeneous groups making up the heterogeneous general public, although, at the same time, they accept the general public as a "public." In gaining acceptance for a marketing program, we must take a hard look at all our publics to be affected by the program, or who will be affecting us, and carefully plan methods to reach these publics with our messages and ideas.

Probably the first public with which we are confronted is agriculture itself, including the farm organizations, agricultural educators, and the agricultural press. Then, apart from, but directly connected with agriculture, are the primary buyers of agricultural products. These include processors, shippers, wholesale merchandisers, and institutional buyers. These are the men who will be next directly affected by almost any marketing program, since they are normally about the first to handle an agricultural commodity after it leaves the farm. In these days of order buying, integrated and contract farming, and specification buying, this is especially true and likely to increase in importance.

To move on to our next public, we know public relations men sometimes make a great point of their contacts with the press. Well, to an extent, they are making a valid point. To gain public acceptance, one of the great publics is the press--radio, television, magazines, and newspapers.

But too often, I fear, we do not stop to realize that the department of the newspaper most interested in marketing activities is not the editorial department, but rather the advertising department. Newspapers and television stations are great marketers. Just read their trade papers sometime if you want to see how great this interest is.

Generally we worry about the editorial side since the editors write nasty editorials when they dislike something we do. But from the advertising department of the media, we can quite often get real support and assistance in marketing programs. These people are experienced and, in some cases, can point out mutual profits from active support of a marketing program.

The next public is one which has a lesser effect on the Agricultural Marketing Service or a private organization. Most of you here today are fortunate enough to come from areas where State legislatures still are interested in the farmer and his welfare without any, or at least little, prodding from the outside. Let me warn you, put your house in order, for the day is coming when you will have to go before urban legislators to gain acceptance of your programs. Legislators from metropolitan and urban areas frequently do not know the farmer's problem, usually do not care, and may avoid the issue completely if possible.

To those of us in State governments, the legislature is a public. It is clearly defined and can be analyzed in half a hundred different ways.

I like to lump another public into the category of "policy makers." These are the "Very Important Persons," the local celebrities, and others in high positions who must be recognized. We all know them, and practically automatically know how to handle them. But we must not forget them when making our public relations and publicity plans to gain acceptance of our programs.

Last, we will take the most numerous public of all: The general public. This includes all the people--the homemakers, the 21-to-27 age group, the teenagers, men, women, industrial workers, white collar workers, unemployed, aged--the entire spectrum of our populations. And, I will add, this public is probably the least important to consider when planning a marketing program in terms of acceptance of the program. By making a "pitch" to the general public, it is possible to spend more money for the least results than with any of the other publics I have mentioned.

In considering methods of gaining acceptance of marketing programs, we shall assume that the desire for such programs comes from agriculture. Educating agriculture on the importance of marketing is quite another problem which we must consider separately. But since agriculture wants a marketing program, we must keep agriculture convinced that the program we are operating is likely to succeed, that it is working, and that agriculture is benefiting. Three methods are excellent for instilling this confidence and trust, or acceptance.

Set up advisory groups and committees to whom the marketing men may report. Have members of the marketing staff participate actively in the affairs of agricultural organizations. Attend annual meetings; get the marketing executives on the programs. Don't send underlings, but rather the executives. Tell your success story over and over. Answer questions. The agricultural press is always hungry for copy. Even minute details of a marketing program make a story. Use the farm press.

Our next public, the primary buyers, requires service and direct benefits to themselves, in addition to benefits to the organization they work for, if they are to accept a marketing program. Most of us disseminate marketing information and market news. We should make sure that this reaches these buyers. They also should be the recipients of direct mail stories about the marketing program affecting them.

Institutional advertising in food or merchandising trade papers reaches these buyers. Due to belief in the printed word, such advertising tends to enhance the program in the eyes of this important public.

The importance of the field service man cannot be overemphasized. These men who call on buyers can make or break a program in the eyes of a buyer. They should be schooled in the importance of selling the program as well as the product. After all, their job depends on the success of the program.

Once again, we should not hold ourselves aloof from participation in the special events planned by buyers' groups and associations. In selling a program, one of the most important tools in the hands of the administrator is the face-to-face contacts with captive audiences at meetings, conventions, and the like. This, combined with a strong followup and personal contact, is a primary selling device, whether it be for soap or a milk marketing program.

To continue with the methods we should use to inform and persuade our publics, communications media should be supplied with full, accurate, and timely information about the marketing program in progress and those planned. This goes for both departments of the media. In addition, you can hold press conference briefings at which new programs are introduced and provide marketing and market information to the media. Media men, also, could be included in advisory committees.

Gaining acceptance with legislators, I feel, is primarily a job for the top echelon of the marketing organization. Personal service is the keynote. Through personal visits, tours, demonstrations, meetings, testimony, and the like, legislators must be shown the importance of marketing programs, not only to the farmers, but also to the entire business climate of the State. Throughout the year, the good will of these men may be kept by providing personal service, pointing out work that has been done and the beneficial effects of the program, especially if it can be localized to their home county or district. This is a large order. But if you are dependent on appropriated funds or on specific marketing legislation, it is a job that must be done.

As I said earlier, we practically automatically deal with the policy-making public. These are the people invited to dinners, fair openings and special events. Quite often their support is not necessary for the project at hand, but their acceptance of the general program is mandatory.

The general public, not important in the acceptance of the marketing programs, should, however, be kept informed through news releases, displays, exhibits, films for schools, and literature. This should not be overdone, since another phase of the program may be engineered to hit the general public directly to increase sales or gain acceptance for the product.

In closing, let me repeat that ideas are the heart and soul of a marketing program. Since most of these acceptance selling jobs must be done continuously, it takes ingenuity to plan new ways of doing the same job over and over without becoming dull or offensive.

Once again, we come back to the field service man. He has, normally, the closest contact with the most publics. His experience and training, or lack of it, sometimes can make or break a program, in spite of all the other work done with it. If the men in the field are well trained, if they are kept informed--yes, we may as well call them a public also--the program should grow and prosper.

Internal and external public relations, well planned and doggedly pursued, will gain great and lasting public acceptance of marketing work. But gaining this acceptance, let me warn you, is not a job for a lazy or indifferent man.

CONCLUSIONS AND RECOMMENDATIONS

of Work Group on Administering Marketing Programs

Matching fund projects can be the "rocket" that will enable commodity groups to compete in space-age marketing. This was the conclusion reached by the work group after discussing the topic "Accomplishments of State Departments of Agriculture in Marketing."

Normal State appropriations often are not available for work in new areas of marketing. "Matching funds were originally designed for such work and should be so used," stated one participant. "When exploration is completed in one area, the funds should immediately be directed to new problems."

Examples of matched fund projects and their accomplishments were given in detail by 4 State representatives. One cited the importance of collecting and using new data in making marketing decisions. Another reported on the quality improvement accomplishments in his State. The relationship of matched funds with expanded promotion of various commodities was discussed by the third speaker. Projects designed to improve efficiency in marketing were presented by the last specialist. Throughout the presentations and ensuing discussions there was emphasized the necessity of constant re-evaluation of present marketing practices and adaption of new, more efficient techniques both by industry people and the specialists working with them.

To enable a marketing service program to better serve the needs within a State, the following specific conclusions were reached:

1. We must continually define and classify marketing problems and develop priority ratings to best utilize talent and funds.

2. Matched funds must be considered primarily as means of pioneering new areas of marketing or bolstering weak but essential service programs.

3. All efforts to expand the promotion and merchandising of a commodity should be undergirded by a sound quality control and grading program.

4. Matched fund marketing projects should not be treated as an area separate and apart from other work but integrated as a vital part of an overall and complete program of marketing by a State department of agriculture.

5. Marketing work of all types should be sufficiently flexible to meet the demands of a changing agriculture and designed to give special or even emergency assistance in areas of need at the right time and place.

"The rapidly changing marketing picture makes it imperative that every wideawake marketing division take full advantage by making use of every single available marketing tool." This was the challenge presented by the leading speakers at the second session dealing with new accomplishments in marketing. "The tool designed by the Federal Government in the form of matching funds can be most useful," the speaker continued.

Six relatively new areas of matched fund work were presented by succeeding speakers, each very successfully enticing the interest and enthusiasm of the group.

The first speaker, using the lean-type pork problem as his example, emphasized two alternative methods of working with processing firms--in this case packers: (1) Study intensively a specific problem of one firm, using analytical methods the firm itself cannot use; and (2) coordinate a group of firms into an operation which might benefit each, but which they are not developing themselves.

The rapidly growing problem of the effect of mercantile exchange transactions on price determination and the need for expanded country-point price reporting through market news projects was introduced as the second new area.

In emphasizing the area of transportation, the third speaker stated, "Agriculture has been riding fleecy clouds as far as transportation is concerned, but the clouds and bubbles are likely to break, if agriculture does not organize and protect itself."

The new areas of improving wholesaling and retailing efficiency, of assisting low-income areas through a well-organized timber marketing program, and the facilities development work for poultry processors were described by 3 other State representatives.

Several fundamentals were developed during the discussion of these programs, and they may be applied in many areas of marketing:

1. Tools in the form of marketing research, analytical techniques, and experiences of others should be applied more readily in solving problems both on an individual level and through group cooperation.

2. Agricultural trends and resulting marketing changes should be anticipated well in advance to enable carefully developed and proved programs to replace outmoded practices, as evidenced by country-point price reporting replacing terminal-market reporting.

3. Loss by default is inexcusable, especially in such important marketing areas as transportation and wholesale and retail assistance. Agriculture has much to protect and even to gain through positive, aggressive action in these fields. It is recommended that, where States are not able to employ capable

specialists in these fields, they consider hiring consultants to at least analyze and evaluate their specific needs.

4. New frontiers await many States in matched fund work, especially in secondary enterprises such as the timber marketing program of one State. Such efforts can be of significant value in raising the income of not only specific groups but also major areas of a State.

In delving into the important but intangible area of public relations during the third session, the first speaker challenged the group with the statement ". . .the general public is not particularly interested in the woes of agriculture as such. They are interested in how the problems of agriculture affect their pocketbooks."

Who is this public? How may they be reached? How may the department program, the farmer's problem, or the processor's role be presented--and understood--by this public?

"The public is not a singular entity," stated another speaker, "but a number of separate groups, each demanding a different approach." He classified the groups as including agricultural leaders, trade and commodity buyers, media, legislators, policy makers, and the general public.

Based on the premise that the first step in reaching these groups and in obtaining good public relations is through a complete, positive information program of a State department of agriculture, the third speaker outlined the effective work within his State. Releases, feature articles, house organs, radio and television programs, progress reports, food editor tours, public utility cooperation, and other activities including use of a shiny new "Farmmobile," were methods mentioned as being used.

From the many excellent proposals discussed by the group, the following recommendations and conclusions were reached:

1. Personnel is a key factor in your information and public relations program. The self-esteem of persons in your information office, in your marketing work, in your entire department, is important. They are important; they must reflect self-confidence and high morale. They are in constant contact with the public and with their assistance you may more easily gain the desired public acceptance for your program.

2. The general public is bombarded with information and misinformation regarding the agricultural situation, much of it slanted with ulterior motives in mind. Do not overlook the value of fact sheets as a means of winning public attention and acceptance. These should be patterned to specific groups, using information that those groups will understand.

3. Remember, any program worth doing is worth doing well. This is especially true in this work of disseminating information and winning public acceptance. Constantly present the positive side and keep it as modern as possible.

Work Group Sessions

TAILORING YOUR RELEASES TO THE REQUIREMENTS OF VARIOUS NEWS MEDIA

John C. Baker, AMS
U. S. Department of Agriculture

With the rest of you, I'm supposed to discuss "tailoring your news releases to the requirements of the various news media." Let me lay out a framework of ABC's to guide us, and then we'll start exchanging ideas and opinions and prejudices.

One of the ABC's in our work is that information is a long arm of administration. We information men don't decide policy, although in most well-run governmental organizations the information man is in on the policy making. But the responsibility for making decisions is up to the director, the administrator, the boss. The reason for our existence is to help the boss accomplish the programs he lays out, by applying our skills in communications.

The second letter of our ABC's for agricultural information men is that there is no such thing as "THE public." Rather than one public, we have many different publics, and we reach them through several different media. In many cases, we may want to use several different media to reach just one of our major publics.

As a start, let's divide people into 4 major "publics:" producers, consumers, businessmen, and professionals.

Producers of agricultural products, of course, are most readily sorted out according to the things they grow and sell: Hog farmers, cotton growers, cattle feeders, sheep ranchers, orange growers, and so on.

For our purposes, the consumers are about the only ones that can be treated as a homogeneous mass. If we deal with the subject lightly and don't examine it too thoroughly, we can get by with thinking of consumers as personified by Mrs. Homemaker, with a husband and children to shop for, to cook for, to pick up after. This is a makeshift kind of symbolizing, but most of the time it will have to do.

Businessmen break into even more different categories, because each one tends to perform a specific function for a specific farm product--for example, the meat packer, the cotton ginner, the livestock trucker, and the potato shipper.

And the professionals. You and I would fall in this category. We make our living indirectly from agriculture--we're interested in many different phases of agriculture; we want to keep abreast of what is going on in Federal and State departments of agriculture; and we want to keep up to date on the price of hogs, the size of the cotton crop, and the changes in egg grading laws, even though those things won't influence our personal incomes. County agents, agricultural college people, State and Federal department of agriculture people, farm organization staff members, people on the payrolls of banks, railroads, advertising agencies, and large corporations are the kinds of people I'd class as professional agriculturalists. I'm not accepting the definition of an agriculturalist as "a farmer with a station wagon."

The reason for going into all these categories is that they provide the basis for a system of distributing what you write. In practical terms, they can guide the way we set up our mailing lists.

In our Midwest Information Office of the Agricultural Marketing Service, we have about 200 different mailing lists of mass means of communication in 11 States. Some names appear on several different lists. Some of the mailing lists may have only 1, 2, or 3 names. Our biggest list has about 550 names.

Some of the lists are broken down by States. We can reach all the midwestern radio stations and nothing else, if we need to. We can mail to the publications and trade association newsletters that circulate in the grain trade, or the meat trade; we can reach the retail grocers of 11 States; we can put our copy in the hands of farm magazines, farm editors of daily papers, and farm broadcasters in Iowa; or we can reach the daily newspapers in the area that supplies milk to Detroit.

So, when an announcement is to be made, the routine is to decide who is interested, and then prepare different stories for each of several mailing lists, trying to slant the story to the interest of each of the several different publics.

As an example, one of the activities in which the Agricultural Marketing Service is engaged is what we call our Plentiful Foods Program. Each month, a committee in Washington selects foods which it believes will be abundant. The November list was selected about the last week of September.

Who is interested? First of all, consumers. Mrs. Housewife, something like 50 million of her. She's the one we want to know about the abundance of pork and apples and almonds, and so on. Second, food retailers, wholesalers, and chainstore operators. They are the ones who will make the food available to Mrs. Housewife. Then, the processors, such as meat packers, cheese makers, and dairy plant operators. And the professionals, especially extension service marketing specialists and consumer agents. The restaurant operators are another group we want to reach. And there are about 14 million school children, in more than 50,000 schools, who represent a tremendous market for the foods classed as plentiful. And let's not overlook the farmers and ranchers. We want Indiana hog farmers to know that we're trying to help sell their pork.

Some of this information is made available by direct mail. Our Washington office prepares at least 4 different versions of each monthly list of plentiful foods. One is a general list which deals mainly with the supply and price situation; another is a list for the food distribution industry, which includes suggestions on how to merchandise more fryer chickens or more cranberries; and still another version goes directly to several thousand restaurant operators and managers of factory cafeterias, and includes menu suggestions and a recipe or two using the featured food--pork, for example, in October. A somewhat similar announcement goes directly to supervisors of school lunchrooms. This version is experimental at present, and goes to about 1,500 schools in the Midwest. Those lists with specialized suggestions, issued in Washington, provide the foundation for the releases that we put out from our area office in Chicago, and from comparable offices in New York, Atlanta, Dallas, and San Francisco. About the first of October, we sent out several news releases, each one slanted at a specific target, each one based on one of the specialized lists of plentiful foods for November. Here are a few sentences from the release that went to food trade publications, aimed particularly at the food retailers:

"Traditional Thanksgiving dinner items, turkey and cranberries, along with pork, share top billing in the November list of plentiful foods sent by the U. S. Department of Agriculture to food retailers.

"The Department is conducting special campaigns to pre-sell consumers on two items, pork and almonds. Consumer information is being sent to food editors and broadcasters.

"Merchandising suggestions for pork offered by U. S. Department of Agriculture include tying in pork with apples, potatoes, rice, and almonds, all of which are classed as plentiful."

We tell the retailer which foods are plentiful, which ones we hope will receive special attention from him. We remind the retailer that we are trying to make Mrs. Housewife conscious of pork, turkey, cranberries, and almonds, before she comes to the store; and we offer the retailer suggestions on how to sell more of the foods that are plentiful. Here is a portion of the story that went to restaurant magazines and association newsletters:

"November menus can resemble Thanksgiving all month long, the U. S. Department of Agriculture reports in releasing its November list of plentiful foods to the food service industry. The Department suggests, in addition to the traditional roast turkey, turkey sandwiches with hot mushroom gravy, turkey croquettes, scalloped turkey and curried turkey."

Here is what we want farmers to know, and we attempted to tell them by sending this release to farm magazines, farm page editors of daily papers, and farm broadcasters in 11 States:

"The U. S. Department of Agriculture through its Plentiful Foods Program, will continue during November to help move the big supply of hogs. Pork is featured on the November list of plentiful foods, along with turkey and cranberries. The Department is reporting to retailers, restaurant operators, and housewives on the record production of turkeys, cranberries, and almonds, and stressing the fact that pork supplies are highest in 4 years."

Food store operators are offered suggestions on displays and other methods of selling more pork and other plentiful foods. Restaurant operators are offered suggested ways of preparing and serving pork, turkey, and other plentifuls.

Now we come to talking to housewives. While we send only one story a month to trade publications, we send consumer information copy to food page editors and women broadcasters every week. We call it Midwest Market Basket. Once a month, Midwest Market Basket summarizes the list of plentiful foods. Every week there will be 4 stories of 200 words each, plus short items on the individual foods, how to prepare them,perhaps a recipe, perhaps something about their history, or traditions, or superstitions associated with them. Here is an excerpt from the story summarizing the November list of plentiful foods:

"You can have Thanksgiving dinner at your house all month long if you want to, says the U. S. Department of Agriculture. American farmers have produced more turkeys and more cranberries than ever before. For a change from turkey, include lots of pork in your menus, for we have more pork than at any time in almost 4 years." There is one thing I'd like to point out about that story--and all the others that go into the weekly Midwest Market Basket. We do not attempt to write in two different styles for radio and newspaper use. We've experimented with that, talked with many of our "customers" and reached the conclusion that it isn't necessary. The reason seems to be that the typical food editor writes on a very personal basis to her readers. "You-and-I, we, us and our" are part of her stock in trade. She's different from the man on the city desk, who writes and edits and thinks in a rather cold, impersonal fashion. We've found that we can write in radio style and it's perfectly acceptable to the girls on the newspapers. I mentioned the professional agricultural people. In the instance of the Plentiful Foods Program, we're more interested in making use of these professional people than in merely informing them. We write a special story each month which we send to the agricultural extension editors, with blanks to be filled with the name of the State, and the name of an appropriate specialist on the State extension staff. That specialist, in effect, tells consumers of her State that the U. S. Department of Agriculture has named such and such foods as plentiful nationwide, and the specialist says they'll be plentiful in her State, too. The story gains localization and prestige by association with the State extension service and its staff of specialists.

Once in awhile, in connection with our Plentiful Foods Program, we prepare something for television, to be presented by our own people, or perhaps by consumer agents of the extension services. We did this for our special sales promotion effort on pork. We prepared a script, with a list of visuals or "live props" and one cartoon. The thing we tried to accomplish was to let the viewer get the story through his eyes, rather than through his ears.

The live props included a half dozen coins--nickels, dimes, and quarters--and several cuts of pork. The program started with the performer jingling some coins and hinting that the stuff might be worth saving. Then he put the coins down one at a time on the table, and the path of money led to a pork loin roast. Then he talked about the pork supply situation, using the cartoon which showed a small pig hanging from a dollar sign, and a much larger pig stretching the dollar out of shape. At the end of about 3 minutes, he made another trail, this time with the several cuts of pork, leading to a pile of coins--the money you can save if you include pork in your meals at this time of year.

It isn't difficult to adapt your releases to different media. Decide what kinds of people are interested and what their viewpoint is likely to be, whether you're going to tell them your story through the eye or the ear. Develop mailing lists of the channels for reaching the several "publics," and then prepare your material accordingly. It's easy, but you can find yourself working awfully hard at doing it.

EFFECTIVE PRESENTATION OF MARKETING INFORMATION

Glenn Sample
Indiana Farm Bureau

You want, above all, to have people easily and clearly understand the information you are bringing them.

First, of course, you need the raw data before you have anything to present. This may include contrasts and comparisons. It may include norms and averages; but, if it does, be sure to use terms commonly understood when you're talking of supply and demand.

How much does the "man in the street" know about either the terms or the situations you use? Generally, in my opinion, very little.

So your raw data must be clear as to what the words mean. You must use your imagination in attempting to bring about an understanding of the consequences of marketing. And you must be ever mindful of maintaining the integrity of your reporting.

Second, you must be concerned with how your information material is written. This is the sales end of the service package you are presenting.

Third, you must be heedful of the distribution of your information. You have to make a specialized effort to service a specialized outlet. Remember that the farmer has changed. He no longer is in the image that the one-time farm boy now living in town remembers.

Think of the depth of your information. Get your material to organized groups and meetings, and to their specialists. Remember that trade papers and house organs need special handling.

The group then discussed the problem of getting farmers to use antibiotics, insecticides, herbicides, and other materials within their recommended limits. Discussion revolved around the three points made by Mr. Sample in his initial presentation.

BASIC STEPS OF PREPARING A NEWS STORY

Jack Gilchrist
Georgia Department of Agriculture

Every good newspaper story answers five questions, and, no matter how short or long the story, the answers to these questions must be included if the story is complete.

In the newspaper profession these five questions are known as the five W's. To the working newspaperman they are known as WHO, WHAT, WHERE, WHEN, and WHY.

In writing any story for a newspaper, these five W's can serve you well as five building blocks upon which the framework of your news story can be constructed.

By writing a story based on a foundation of the five W's, you answer the questions any reader unconsciously asks when reading a news article. The WHO, WHAT, WHERE, WHEN, and WHY of a news story form the very heart of the story itself. Leave out just one of these important W's and you may leave an unanswered question in the mind of the reader.

Suppose we examine each of these five W's and the questions they ask so that you will be thoroughly familiar with their importance in any newspaper article.

The first of the five W's is WHO. Doubtless you have heard the well-worn phrase "names make news." No saying was ever more true. Whether the newspaper in your town is a small weekly publishing one paper a week, or a huge daily publishing five editions each day, the names of people are of great importance. The people in your town want to read about what other people are doing. They are interested in their neighbors, their city officials, anybody and everybody whose actions or activities are different in some way from their own. Thus, names are important. In many instances the WHO of a story is of greater importance, and thus will attract more reader interest, than any other news facts that go to make up the news article.

The next W important to any news story is the WHAT of the story. WHAT happened? WHAT is it that makes the story important enough for reporting in the pages of a newspaper? In many instances the WHO and WHAT of a story share equal importance. If a prominent person in your town were killed in some tragic accident, the WHO and the WHAT of the story might be equally important. Whenever WHO makes the news, he, she, or they had to do something. WHAT was done is thus just as important as WHO did it. The story would not be complete unless both were included and explained. On the other hand, WHAT could make the news by itself. Weather news is usually a WHAT type story. Hurricanes, tornadoes, and droughts, all make news without the need of a WHO angle to support their importance. The same WHAT angle usually rules stories of train wrecks, airplane crashes, and other such stories. A great percentage of the major news stories reported by the press annually are WHAT type stories. Whenever the WHO element makes news, it must be backed up by the WHAT angle but frequently the WHAT element will create screaming headlines without any mention of WHO.

WHERE is your next important W. The newspaper reader wants to know WHERE the news occurred. A newspaper story originating locally should mention the street, building, or otherwise identify the location where the news was created or made. A story from some other location should identify the town in which the event took place or the town nearest the site of the news event. Just as most good news stories answer the questions of WHO and WHAT, they must also answer the question of WHERE.

Your fourth building block is the W known as WHEN. The WHEN of a story actually determines whether it is news. In reporting events that occurred so long ago they are no longer news in the true sense of the word, a newspaper sometimes uses the expression RECENTLY but the use of this word doesn't completely answer the question asked by the inquiring mind of the reader. Whether the story concerns the birth of a baby or the election of a president of the United States, the WHEN of the story is equally important. It matters not whether the news has already occurred or will occur in the future, the WHEN of the story must be explained if the story is to be complete.

The final W, the WHY of the story, can sometimes be confusing to the writer of a news article. There are times when the WHY of a news event is of little or no importance and at other times it may be difficult to explain WHY something happened or WHY it is going to happen. In such cases, the WHY of the story can be substituted with the HOW of the story. HOW did it happen or HOW is it going to happen? In answering the question of WHY or HOW, you must be your own judge of just how important the questions are. Frequently, you will find that you can do without this final W and still come up with a pretty good news story. If, however, WHY a thing happened or HOW it happened is important to the completion of a story, it should be included and the question answered. Never leave the reader guessing. You must anticipate and answer all the questions his mind will unconsciously ask while reading the story.

There you have your five W's. Rudyard Kipling called them his "working men." But whether you consider them "working men," building blocks, or perhaps even stumbling blocks, they will always form the foundation for any news story you write and must be treated with the respect they command.

CULTIVATING GOOD RELATIONS WITH THE PRESS AND OTHER MEDIA

William P. Charron
Maine Department of Agriculture

We have been told that marketing is simply the movement of agricultural products from the producer to the customer. Perhaps this is so; however, today our marketing specialists are working with people in all phases of the marketing process. A very important part of their work is to endeavor to bring the product to the attention of more of the general public and to assist our producers, shippers, and processors in locating new markets.

As our marketing and promotional programs continue to grow, we are coming in contact more and more with representatives of the press and other media. These people may be newspaper editors, food editors, advertising managers, home economists, radio and television program directors, magazines, or trade paper or house organ editors, all of whom have little or no knowledge about agriculture. The information which we make available is always most welcome.

On the other hand, our specialists are not publicity representatives and are making special efforts to deal with news people in the correct and proper manner. We would like to tell you what we are doing to improve ourselves, and our programs, in order to have better relations with these individuals.

Any market service or promotional program which has been geared to operate efficiently must have good working relations with the press and all other media. We have found that newsmen are the easiest people in the whole wide world to get along with, if treated right. They appreciate friendliness and consideration and, by the same token, they resent ambiguous answers and brazen attempts to curry their favor. At all times their questions should be answered accurately and straightforwardly, and treated with respect.

In Maine we work very closely with our 7 daily newspapers, 43 weeklies, 19 radio stations, 6 television stations, trade papers, magazines, and various house organs. Our staff of marketing specialists and our publicity representative visit these newspeople personally whenever they are working in their localities. During these visits they thank them for what they have done for us, give them more information, find out what their desires are, and tell them about coming promotions.

It has become apparent to us that it is most important to simply state the facts, and the news release will be treated correctly and fairly. From personal experiences, our specialists know that in the preparation of copy it is well to adhere to a few simple rules, which are as follows:

I. Preparation of material

   A. Analysis of what media can use

      1. For example, a release designed for consumer reading will not be used by trade papers
      2. The specialists study and find out what the likes and dislikes of certain types of publications are and prepare their material to suit the requirements; if they do this carefully, the media will almost have to use the material

   B. All requests should be kept within reason; we understand what the editor is able to do, and try not to embarrass him by asking more

   C. Study the personality, style, and copy slant of the individual using the material; once this is done, the specialist can prepare his copy accordingly and make it easier for him to adapt the copy to his own style

   D. Do not ask the employee to violate his publisher's policy; all publishers have a set of rules which editors and other employees have to adhere to; once we become familiar with these policies we respect them at all times.

   E. Avoid material which attacks a competitor

      1. When dealing with the press and all other media, this is most important as these people deal with products from all areas and try to treat them fairly at all times
      2. We make it a strict policy to never talk down a competitor's product; if it is good, we say so and hope ours will match it or surpass it in quality

   F. Keep all material factual and within the standards of strictest integrity; all media respect our staff as they never make promises they are unable to fulfill; in fact, many tell us we are too conservative in our approach; we like it better this way and believe we are able to obtain more mileage.

II. Preparation of other material:

  A. Professional photographs

    1. Our publicity representative is improving and is becoming more proficient in this art; when his work is not up to the standards the press and other media expect of us, we go to the professional
    2. We are training our staff of specialists in the use of the 35-mm. camera and the still camera; as a result, we have built up a library of color slides of displays, exhibits, and special promotions, and these are most useful in showing our agricultural people what we are doing

  B. Professional copy which does not require rewrite or too much editing

    1. The dailies have the personnel to edit and rewrite, but it is better if our material is prepared correctly the first time; the public gets the story straight
    2. However, the small weeklies and trade papers do not have the time, nor the personnel, and as a result sometimes leave out or cut out material which leaves the reader with the wrong interpretation
    3. We endeavor to have our material written clearly, correctly, and in a language that the average person will be able to understand

  C. Professional appearance and packaging of the material

    1. All the stationery we use is properly printed and easily identified as being a news release from our department
    2. Photographs and other material are packaged correctly so they will reach their destination in good condition and create a good impression on the receiver

III. Reasonable requests of media; we send our copy to all media and ask them to use it if it meets with their requirements

IV. Appreciation of cooperation given

  A. We always thank all media for using our material (when possible in person), usually by letter

  B. Action of this type is usually appreciated and, as a result, the department's material is used more frequently

V. Quick and efficient source of inquiries

  A. We try to answer all inquiries as quickly as we are able to do so

  B. If we do not have the answers, we try to obtain the information for the inquirer or we direct him to an agency which can be of assistance to him right away

VI. Integrity in answering inquiries

   A. At all times we try to keep the information which we give inquirers factual and to the point

   B. We find that the public respects our department and looks to us for correct, up-to-date information about Maine agriculture.

VII. Try to follow through with personal contacts; whenever possible, we try to visit with persons who cooperate with us in our promotions and with media that utilize our releases

VIII. Don't use form letters in correspondence

   A. All our letters to the trade and to media are personalized

   B. The marketing specialists who do the work and make personal contacts write their own letters to their contacts; they are always originals

IX. Always be available to learn the advertising story of all media, representatives being careful not to state "no need for paid space because we are able to obtain loads of free publicity."

X. Always be on the alert for special stories applicable to special media; while in the markets, the specialists often come upon copy material which may be utilized in certain trade papers.

Every commercial broadcasting station or television station in America that is licensed is required to broadcast or televise a certain number of hours of programs "in the public interest." For example, the radio industry annually gives away millions of dollars of free time. Such free time ranges from spot announcements to hour-long programs. A capable marketing specialist, publicity representative, or public relations man looking for a way to tell an agricultural industry story to as large an audience as possible at a minimum cost, would do very well to look into the possibilities of public service programming. Radio and television people, like newspapermen, are usually very willing to assist in promoting a worthy cause, an altruistic project for social betterment, or the movement of a huge surplus of an agricultural commodity produced in their State.

A friendly radio station manager can assist the marketing specialist or publicity representative immeasurably by telling his story to the community. The radio or television station manager may grant an organization free time through (1) news coverage on local newscasts; (2) spot announcements; and (3) public service programs ranging through speeches, interviews, panel discussions, and films.

A good example of this type of work is our department's movie and television film service. We make films available to television stations located where Maine agricultural products are sold. The films feature Maine potatoes, chicken, apples, maple syrup, blueberries, farming in Maine, and our newest market service work.

During the fiscal year which ended June 30, 1959, we were able to have 594 complete film showings over 162 television stations for a possible audience of 333 million people, all located in markets east of the Mississippi. Hildreth Hawes, who produces the films, has advised that we received 115½ hours of free television time which was worth at least $58,000.

We believe the stations use the films because of their quality, their professional makeup, the fact that they are noncommercial, and their wish to create good will and improve their relations with their customers (chains and others who advertise on TV).

In our State, program directors, home economists, farm program directors, and others have often requested our personnel to appear on or take over their programs. We like to take advantage of these opportunities and keep ourselves prepared at all times. We are fortunate to have personnel who are able to do a show on a moment's notice. They are able to do this because they know Maine products, enjoy their work, and like to talk about it.

Occasionally we do make a request for members of our staff to appear on certain programs when we want to assist with the movement of a surplus or wish to make the public conscious of the availability of good-quality Maine products at economical prices.

The marketing specialists try to get to know news editors of television and radio stations in our community. They make it a point to find out from them the type of news which is preferred and in what form they would like to receive it. A favorable mention of Maine potatoes by a national television or radio news service or by a prominent news commentator is worth many thousands of dollars in terms of good will and public esteem.

Before making a request for free time from a radio or television station, the specialist or public relations representative should ask himself 3 questions:

1. Has he the right to ask for free time for the agricultural commodity in question and will the material which he furnishes the station be of benefit to the general public?

2. Has he a definite program proposal outline to present to the program director?

3. Is he or his department prepared to assume the burden of work and expense which is involved in the preparation of scripts, acquiring speakers, and conducting rehearsals?

If a well-organized presentation is made to the program director, the chances of acquiring free time are very good. However, if the specialist is not well prepared, perhaps the director will assume the program will be poor, and the free time will go out the window.

Television and radio are really a challenge to all of us in agriculture, as they are media which reach a larger mass of people than any other type of communication. Thanks to public service programming, they are probably the most effective and most economical method to promote mass understanding of a product. The imaginative and adventurous marketing specialist or publicity representative will find countless ways to translate the story of his product into material which will be utilized in newscasts, spot announcements, and sustaining programs.

This may surprise some of you, but we do promote Maine potatoes in Maine. When we first began to do this, many of our industry people laughed and told us we were wasting our time. Since those days, however, they have found out differently. Promoting Maine potatoes in our State does a lot of good. The trade appreciates our efforts and cooperates all the way.

Part of our Maine promotion comes under the direction of one of our marketing specialists who set up "Maine Potato Week." About a year in advance, the specialist laid the groundwork for the promotions. He called on the trade, newspapers, magazines, radio, and television, and explained the program in detail. Everyone contacted was very willing to cooperate and wanted an opportunity to push potatoes.

The specialist stimulated interest with the trade by holding a meeting where he went over the plans and materials for the promotion. Representatives of the press, other media, chains, wholesalers, and food editors were all present and showed much enthusiasm.

Photographs and other potato publicity material were sent to all daily and weekly newspapers, and food editors were supplied with recipes and feature articles for their columns. All mail leaving the State Office Building had a cancellation mark which read "Use More Maine Potatoes."

A few highlights of the promotion were:

1. Governor's proclamation of "Maine Potato Week."
2. Statewide weekly, "The Enterprise," devoting an entire edition to "Maine Potato Week."
3. Use of the mailing cancellation mark entitled "Use More Maine Potatoes."
4. Enthusiastic response from a potato processor who has a special promotion on his product and credited his success to overall publicity of "Maine Potato Week."
5. Two of our largest chains reported substantial increases in potato sales.

We tried to use all media for this promotion. Our specialists used circular letters, mail meter slugs, special store promotions, pegboard displays, service clubs, restaurants, hotels, banks, wholesalers, chains, independents, TV, radio, dailies, weeklies, special feature sections, Sunday feature sections, trade papers, special restaurant, hotel, and service publications, point-of-sale material, table tents, menu clip-ons, cashier pins, news articles, feature pictures, food editors, and special writers. Much of our material, such as point-of-sale material, was supplied to us by the Maine Potato Commission.

It is interesting to note that this special promotion is successful annually and now serves us as a testing ground for our various promotional ideas before we try them in our out-of-State markets.

Another problem which we recently faced was the fact that Maine potatoes were not featured on hotel and restaurant menus as often as we would like to see them.

For many years the Russet variety has been promoted as a baking potato, and it has only been during the past 5 or 6 years that the variety has been available from Maine. Therefore, the hotel and restaurant trade was not too familiar with the fact that this variety was now available from our State.

We planned to promote the use of Maine potatoes, particularly Maine "bakers," in hotels and restaurants, and we hoped to accomplish this by offering an incentive that would interest these hotels and restaurants in giving Maine potatoes a trial. A plan was prepared to build this appeal around the forthcoming New England Hotel and Restaurant Convention to be held in Boston. The Maine Potato Commission display at this convention was constructed and staffed by our marketing specialists and featured the count pack of Russet Burbanks.

Six greater Boston hotel organizations were personally contacted by our marketing specialists. The availability of Maine Russet Bakers was made known to them and they were all urged to feature this potato as a Maine Baker during the Hotel Restaurant Convention.

In addition to the hotels personally contacted, all other major hotels in the area were contacted by letter and supplied with tickets to the Maine Potato Commission booth at the Hotel and Restaurant Convention. Food editors of the greater Boston newspapers were notified of the promotion and were mailed a supply of informational material plus pictures which could be used in their columns. During the Hotel and Restaurant Convention, the Maine Potato Queen visited the Maine potato display and greeted visitors. Marketing specialists from this department were on hand to discuss the new count pack of Maine Russets, Maine Potato Flakes, Maine Chef's Specials, and various frozen packs of Maine potatoes available to the institutional trade. As a result of the promotion, 9 Boston hotels featured Maine baked potatoes in their menus.

At the close of the 1957 corn canning season, our canning industry found itself faced with the problem of disposing of approximately 900,000 cases of cream-style corn during the 1957-58 marketing season. The total value of the corn crop to the economy of Maine was estimated at $3,800,000.

In December of 1957, the corn canning industry requested assistance from this department in the merchandising and promotion of the cream-style corn pack in order to reduce the excessive inventory and at the same time keep the industry alive. In other words, it was felt throughout the State that if this inventory was not moved before 1958 planting time, many of our canners would be forced to close their doors, and if this happened, it was quite evident that they would never reopen.

The marketing specialists served on various committees and saw to it that members of the State granges, service clubs, institutions, hotels, restaurants, wholesale and retail grocers, the press, food editors, and other special writers were made aware of the necessity for a combined effort to move this excellent 1957 pack of cream-style corn.

Many special window displays were set up in such cities as Portland, Lewiston, and Bangor. In-store promotion displays were set up throughout the State and in New England. Food editors of newspapers, radio, and TV were supplied with ample material and recipes to use on their programs and in their columns.

Two dinner meetings were held for brokers, buyers of canned foods, and the press. One of these meetings was held in Boston, where former Governor Muskie cooperated by presenting the corn canners' problem to the group. Later another meeting was held for Maine brokers and buyers of canned foods and the now Senator Muskie again presented the program.

The dairy industry cooperated by having special corn chowder recipes printed on bottle hangers. These recipes were distributed by milk route deliverymen to 100,000 Maine homes in a 1-week period.

During the summer, the corn canners staged a cream-style corn display contest for New England grocers. Approximately 75 entries were received. All contestants were required to submit pictures of displays, along with the number of cases of cream-style corn sold. The winners were awarded cash prizes. Stories about the winners and their displays appeared in the newspapers, giving the program more publicity.

At the end of the month a complete report on sales in Maine and in New England was made up and sent to the trade and to the press and other media. Splendid cooperation was given by all groups and the results soon began to show. On August 1, the total number of cases sold was 590,712, and the number of cases on hand was 129,362.

Housewives throughout the New England area were given an opportunity to reacquaint themselves with many old New England recipes which featured New England cream-style corn. Many customers had forgotten that this product was still available on the shelves of the grocery store. Cream-style corn was an excellent product to use in a promotion during the Lenten period. The product fitted nicely into a variety of recipes which food editors presented to the public.

The main reason we have described some of our recent promotional efforts is to bring out the fact that in order to acquire full cooperation from the press and other media there must be action in all phases of our programs.

We must help ourselves, be flexible, and be ready as special problems are presented to us. By making use of all our tools, taking advantage of all opportunities thrown our way, and making sure that all information which we give out is well-prepared, correct, and up-to-date, we are improving our relations with the press and other media.

These people know their business. To obtain their cooperation we must show them that we, too, know our business, and that we can be depended upon at all times for copy which is factual, to the point, and correct.

IMPORTANCE OF PUBLIC RELATIONS TO THE SUCCESS OF MARKETING SERVICE PROGRAMS

Marvin A. Faller
Louisiana State Market Commission

It is a pleasure for me to talk to you about the public relations aspects of service work in the agricultural marketing field, as I believe solidly in striving to create good will among our fellow men in everything we do, whether it be working toward the establishment of a large terminal food marketing facility in a major city or establishing a local cooperative marketing organization to handle a small acreage of produce out in a rural farming area.

At this time we in Louisiana are beginning the journey toward a terminal market for the New Orleans metropolitan area, and we are well down the road with our Produce Marketing Cooperative. Believe me when I say that each step has been rough and a continuous public relations job has been essential all the way.

My State is about as fortunate as other States in its cooperative and mutual working relationships with the many interrelated agencies working in agriculture. The Louisiana Department of Agriculture feels that it has not only a responsibility but an obligation to see that its programs complement and assist, wherever possible, other agencies in this field of agricultural service and education. Program planning and execution with the various farm organizations and agricultural agencies, and particularly with the agricultural Extension Service, seldom meet unresolved problems. In fact, several times each year the head of marketing work in the Extension Service and I consult with each other with the result that a much better understanding of our aims and efforts is accomplished.

It may surprise you to know that we even have a joint Agricultural Marketing Act project with extension service in Louisiana. The Extension Service and our Market Commission secure information from every county, assembly market, and potential seller of all agricultural commodities available for sale each month. This information is published and sent to over 3,000 truckers, wholesalers, and other buyers. On or about the 18th of each month the marketing specialist with Extension Service mails to each county agent a sheet and a postcard asking him to list acreage, quantity, and location of each commodity for sale in his county. This information is forwarded back to the marketing specialist's office where it is sorted by commodities and given to us, and we supplement this information with reports from our various commodity inspectors. It is then printed and distributed during the first week of every month. This small publication has certainly paid for itself in the sales it has made for Louisiana farmers. But equally important is the fact that this cooperative project always gives us an entree to the Extension Service organization.

There have been times when we in the department felt that some other agency was duplicating our efforts, and if we had been too sensitive about this imagined intrusion, all future possibility of working with this agency would have faded. Our public relations will be helped materially if we can always remember that we have no corner or monopoly on brains and that other agencies and individuals can be just as productive and efficient as we can. The time has passed for the proverbial prima donna in agriculture. I doubt if there is a single agency in Louisiana, or any other State for that matter, that is capable of going it alone without the support, aid, and assistance of the others. In fact, we are finding it difficult even with our mutual respect and cooperation to meet the demands of our times.

The demands in Louisiana are such that hardly a week passes that I don't find myself in offices of Louisiana State University's Extension Service, U. S. Department of Agriculture's Farm and Home Administration, and the Agricultural Stabilization and Conservation Committee. Personal visits, constant communications, and a sincere regard for the problems that confront us are the only basis upon which a lasting and mutually beneficial relationship can be established between agencies.

Improving our public relations with other agricultural agencies is our biggest job, but it is not everything. We have a continuous job of this nature to do with farmers and farm organizations, business people, legislators, and the public in general.

In my opening remarks I mentioned our experiences with two projects, and now I would like to give you a few details. Our New Orleans area terminal market may be under way after some 25 years of floundering around. We have an almost complete survey by the U. S. Department of Agriculture, and we have a $600,000 State appropriation and a board of directors that is functioning. We are now searching for a satisfactory site. Our greatest public relations effort in this--and believe me it has been and still is a tremendous job--has been to keep the interests of the Farm Bureau, New Orleans Area Chamber of Commerce, and city officials headed down the same path.

Cooperative working agreements and good public relations between agricultural agencies have really paid off in relieving the New Orleans market deal in that the U. S. Department of Agriculture, Louisiana State University, and the State department of agriculture have kept a united front, and at this moment we believe the battle is being won and New Orleans may get the kind of terminal market facility it needs.

Our other stepchild that was referred to earlier is the West Carroll Produce Association at Oak Grove, a Louisiana county bordered on the north by Arkansas and on the east by Mississippi. The people in this area operate small cotton farms, and when acreage allotments became effective they did not have sufficient cotton allotments to make the growing of this crop practical. The businessmen of the community became alarmed, organized themselves, collected voluntary contributions of $5 per month from each merchant to assist in financing, and began searching for a means of livelihood for the farmers and for themselves. We were called in, as was the Extension Service, and, to make a long story short, today a successful cooperative is working. Hundreds of acres of sweetpotatoes, tomatoes, okra, and beans are being grown in an area that only a few years ago produced cotton alone, and the entire rural area is much improved economically. This is an example of cooperation and good public relations at its best.

Just to show you that everything in Louisiana is not peaches and cream, I want to tell you about a true happening of a couple of years back. It was during one of our fiscal sessions of the legislature, and we were presenting our case for funds for market news work, when a member of the Joint House-Senate Fiscal Committee rose and stated that he was opposed to such an appropriation for market news. We asked why, and he said all you need to do is have one man get up early and we could obtain all the information we wanted on movements and prices of agricultural products simply by listening to the radio.

Obviously this legislator, who was a lawyer, incidentally, was not informed and we had fallen down in our public relations efforts.

We must remember that everything we do influences public opinion one way or another. Every call or visit made by every employee of our organization, every phone call answered by our secretary, our letters and publications, the appearance of our offices, the way our automobiles are driven, and the quality of the work we do all speak either for or against our organizations.

To maintain good public relations we must have capable, well-trained employees who are enthusiastic about their jobs. Remember, too, that the families of our employees are "ambassadors" influencing opinion either for or against our organization.

If you want to do an effective, long-lasting public relations job, you need everyone on the team you can get.

In closing I would like to leave one thought with my colleagues in agricultural marketing service work. That is--"You can accomplish almost anything you want to accomplish as long as you are willing to let the other fellow get credit for it."

We could well afford to let others have the credit when it holds a promise of accomplishing the job ahead.

EFFECTIVE PUBLIC RELATIONS

J. L. Krider
Central Soya Company, Inc.

Effective public relations can and will play an important role in helping expand markets for agricultural products. The objective which I have is to relate sound public relations principles and their applications to our operations. An attempt will be made to point out possible applications of these principles which could be used in marketing agricultural products in which you have a vital interest. The decision as to whether or not our approach results in effective public relations will be left with you, although we believe that we are on the right track.

Basic Philosophy. Public relations, in itself, is not new. It has existed as long as human society has existed. Every individual who wants to be understood and respected by other people or groups has a public relations objective in achieving those ends. In the broad field of marketing agricultural products, as well as in marketing products made by a company, it is important to understand and envision the operation as a whole before effective public relations can be planned and programs implemented. Unfortunately, many people even now think of public relations as primarily press relations or publicity. Effective public relations goes far beyond this activity. Publicity and press relations is only one of the many activities, although an important one, in public relations. In my opinion, public relations should permeate all echelons of an organization if it is to be most effective. In our organization we believe that every executive, department head, supervisor, and worker has important responsibilities in this area.

What Is Effective Public Relations? In answering this question, it is our belief that effective public relations is 90 percent doing and 10 percent talking, writing, and publicizing the deeds or results. This is a good criterion to keep in mind. Effective public relations is a service function in an organization such as yours and ours. In our company our public relations personnel serves all department heads, executives, and others who need assistance on public relations matters. At the risk of being somewhat elemental, I am giving you some definitions of effective public relations ... some brief, some long:

1. In our company we believe it is the manufacture and distribution of earned recognition.

2. Others have stated that effective public relations means doing the right thing at the right time in the right way and at the right place.

3. Webster defines public relations as the activities of a corporation, union, government, or other organization in building and maintaining sound and productive relations with special publics; such as customers, employees, and stockholders, and the public at large, so as to adapt itself to its environment and to interpret itself to society.

In order to make public relations an effective tool for you, there should be clearly stated objectives for each project or activity.

We believe that clearly written policies and procedures in the hands of your staff and those working with you will facilitate public relations efforts and help avoid many misunderstandings.

The primary and secondary audiences should be defined. The specific area on the target should be determined, because in public relations "shooting the bullseye" is the best way to be effective.

In our company 10 important public relations areas have been defined, with specific activities directed to each. These areas, in alphabetical order, are represented in the following 10 headings:

(1) Colleges, experiment stations, and other educational institutions; (2) community; (3) dealer; (4) employee; (5) farmers and feeders; (6) government; (7) press, radio, and television; (8) stockholders and bankers; (9) suppliers; and (10) trade associations and professional groups.

In your areas, publications on survey information, crop reports, livestock reports, and research reports, must be timely to be most valuable to those who receive them. Much of the information in these areas becomes of only historical interest if it is not timely. Other important factors concerning published materials are accuracy, clarity, and conciseness.

"Communicating" is one of the favorite words of public relations people. It is very clear that our work is to communicate; but what and how? On economic issues, such as expanding our markets, it is necessary to communicate in depth; that is, by publications, press, letters, and word-of-mouth. It must be done objectively, clearly and concisely, with adequate frequency to accomplish our objectives.

In any effective public relations program that is going to gain the respect of the important publics to be reached, there are 3 indispensable elements. These are:

1. Integrity. It means that deeds match words, that statements square with the facts.
2. Sound judgment. It is obviously needed not only for policy decisions, but for the organization of facts, projects, and techniques of presentation, followed by evaluation.
3. Performance. It is in the follow-through that the success of the public relations program can be measured as effective or ineffective.

In reviewing the application of public relations principles in our company's operations, numerous charts and other illustrative materials are used. Much research goes into the planning of each project. Rather than attempt to cover numerous projects, only a couple of them are used here as examples.

1. Our public relations work is organized on a project basis. This is very important, because public relations is such a broad field that it could easily become a hop-skip-and-jump program. Here I wish to cite a brief case history of Central Soya's project, "Foodpower ... USA."

We launched this project in 1957 because of misunderstood or little-known facts about the production of meat, milk, and eggs. It had the full support of the board of directors and management team of the company.

At that time, overtures had been made toward government controls in some phases of animal production. Proposals were being made to our lawmakers for acreage and production limitations on soybeans--a crop vital to the production of these preferred protein foods.

Our primary objective was to reach the opinion molders and leaders in agriculture, industry, and government. They had to be told the true foodpower story, which includes: (a) Why meat, milk and eggs are important to our standard of living; (b) how much progress has been made in the production of these preferred protein foods; (c) where the industries, crops, and products that serve animal agriculture fit into the picture; (d) what contribution freedom of enterprise makes to our production--distribution system; and (e) finally, how vital it is that both progress in production and freedom of enterprise continue if we are to feed adequately our future population.

Early in 1958, less than 10 months from the program's inception, 104 thousand copies of the brochure had been produced. Approximately 60 thousand copies were used initially in individual mailings to more than 30 groups representing every important segment of agriculture, industry, and government, as well as employees, customers, suppliers, press, and shareholders. Substantial quantities were mailed later in answering requests.

Color slides of the book's contents were prepared for presentations at civic, social, and business meetings. Special letters were prepared to accompany books sent to different groups.

Early in 1959, another mailing was made as a continuing part of the program. One of the major groups in this mailing was new members of the U. S. Congress.

Why did Central Soya, instead of an industry association, do this? It was our belief that the company's position in industry demanded that this obligation be shouldered entirely by the company. We were convinced that a stronger and more clearly painted picture could be presented promptly with definite policy views.

What about the results? There was excellent acceptance of "Foodpower...USA" by every important group, including government, industry, agriculture, employees, customers, suppliers, press, and shareholders. On such important policy matters, action usually follows acceptance. We have noted a strengthening of the attitude of important opinion molders, legislators, and agricultural leaders toward this basic policy matter.

The identification of Central Soya and its management with the policy and philosophy stated in this brochure has been an important result. We have become known as a basic industry in food production.

Finally, it has given Central Soya and its people positive identification with "Foodpower...USA" for the present and future.

2. Effective public relations reaches beyond our borders. In expanding markets for agricultural products, whether these are owned by government or private enterprise, public relations can and is being used in developing both domestic and export markets. In many of the programs being used abroad to promote expanded markets, private enterprise, as well as government, is using public relations tools to good advantage. In many instances, private enterprise and government have joined forces to expand markets.

During recent years it has been my privilege to represent American business and the Soybean Council of America in projects sponsored by Foreign Agricultural Service-U. S. Department of Agriculture in several European countries. Many trade groups, including feed and food grains, soybeans and soybean products, poultry, and others, have participated in international trade fairs abroad to exchange technical "know-how" between our business and technical people and those of friendly nations abroad. The big objective has been to help others to help themselves, as well as to develop markets for food and feed grains, vegetable oils, and protein for improving the diets of people in many nations. In some cases, these projects promote the increased production of important commodities, such as meat, milk, and eggs, which will compete with products we are producing in abundance. This is also true in producing many types of processed or manufactured goods. Many of these projects are organized and presented by using public relations tools, such as publicity, displays, exhibits, demonstrations, people-to-people meetings, and the use of handout literature which is attractive, concise, and clearly written. Many people from many nations have visited international trade fairs in which our company has participated primarily to promote improved livestock and poultry breeding, feeding and management; better human nutrition; and the advantages of using American agricultural products in achieving these results. In my opinion, it is very important that we do this if we are to promote and achieve a prosperous, peaceful world in which we and future generations may live. Some people say that in promoting this type of marketing and public relations on an international level we may be selling our future markets. I do not agree with this concept on an overall basis, because our best customers are our keenest competitors, and our keenest competitors are our best customers. Proof of this fact is seen in our strong, thriving domestic economy. Some time ago, Malcolm S. Forbes presented an analysis on this subject. He showed that Canadians and West Germans, very prosperous and tough competitors of the United States, bought an average of $235 and $19 per head, respectively, from us in 1957. People of India and Ethiopia, who are hardly competitors at all, could afford to buy but $1.10 and $0.33 per head, respectively. So it is plainly to the interest of agriculture and industry to see more of the world become industrialized, prosperous, and competitive.

In the final analysis, effective public relations can strongly support marketing activities by promoting the good name of the producer or the manufacturer, based on sound facts, to economically and efficiently motivate product sales in the total market. It also encompasses the realization that the entire national and international community consists of investors, managers, employees, and consumers who are interrelated more closely today than ever before in our history.

PRINCIPLES OF VISUAL AID PREPARATION

E. C. Ferringer
Purdue University

Our agricultural television activities here at Purdue are mainly in the area of materials we prepare and distribute to TV farm directors and county agents in and around Indiana. Thus, commercial TV stations do our farm TV for us, and we like it that way. We have 19 television stations with which we work or have some contact. Eleven of these have farm programs, some have full-time farm directors, some have a farm program done by the news director or other station person, and on still others, county agents have regular shows. We try to help these people, and ourselves, by supplying materials.

What kinds of materials do we produce? Movies are one, and they may be black and white or color, sound or silent. They are all short (3 to 7 minutes long). All are "open end," meaning they have no titles or screen credits.

They are introduced by the person using them who makes them a part of his program.

One of the earliest forms of TV material we prepared here, we call a packet for want of a better name. A packet includes a collection of still photographs or cartoons and a script to be read while the visuals are on camera. The photos and/or drawings are mounted on 8½- x 11-inch gray cards, punched, and placed in standard 3-ring looseleaf binders. Some farm directors use the visuals right in the books; others place the cards on an easel or hold them. The binders serve as mailing containers and as protective covers for storing in our TV "library."

All packets and films are kept on file in our office to fill requests which might come in after the first round of TV showings. Farm TV directors often request an item for a repeat showing.

A most recent type of TV material we have developed is the television spot announcement of 10-, 20- or 60-second length. Spot announcements are not new, but the use we've made of them is perhaps a little different. A few of our TV spots are used within farm shows, but most find their use at the station break. We have gone beyond the limits of "agriculture" in the subject matter for spots. Some are on agricultural subjects, of course, but many deal with home, lawn, garden, and consumer information. We're trying to reach a general audience with the spots.

The 2 x 2 slide is the visual we send out with the spot announcement. A 10- or 20-second announcement usually has only one visual, while a 60-second one may have 4 or 5. The spots are sent out on a "no return basis" and stations are encouraged to file and reuse them when they are timely. The script carries a note which tells when the spot might be used. For example, it might say: "Use during October and November" or "Use at any time."

One Indiana television station, to which we've sent spots, supplied us with some surprising figures from their 1958 station log. During the year, station WLW-I, Indianapolis, used 481 spot announcements from Purdue. This represents time worth $43,140 (based on their going commercial rates). Of these spots, 111 were used in WLW-I's Class AA time, from 7 to 9:30 p.m. This, we feel, is real good time to "crack" with educational material.

We like the way our approach to agricultural television has worked for us during the past several years. Although our budget is small, our movies, packets and spot announcements have allowed us to cash in on a powerful communications medium. We hope we can continue letting commercial stations help us do our TV job.

PREPARING EXHIBITS AND VISUAL AIDS

Hildreth Hawes
Maine Department of Agriculture

My talk will cover much less of the general subject of audio-visuals than is indicated on the schedule. My work is primarily in motion pictures--in the production and distribution of short films which find their principal audience, in numbers at least, through television.

This is certainly the day of the magic box of television, not only in the living room, but in the bedroom, kitchen, on the patio, and even in the canoe and the outboard cruiser.

Motion pictures are a long-time project of the Maine Department of Agriculture. When I first did public relations work for this agency, in 1934, films had been in use for several years for educational purposes, in the sense that Granges and other farm groups, and occasionally civic clubs, used them as program items. No one ever told me exactly when it all started, but in 1934, there was a portable 35-mm. projector, one of the first 16-mm. cameras Kodak made, the famous handcrank Model A, and an early Bell & Howell 16-mm. projector. There was also some current model equipment, and a project to make a 16-mm. color film on the history of the potato from the Andes to Ireland and back.

As the years went on, increased emphasis on State product advertising led naturally to the development of films which had a promotional slant. Just before the war upset marketing, I made a sound-on-disc film called "A Woman's View of Maine Agriculture," which was intended primarily for use in Maine cities, to spread the gospel of food from the farm.

After World War II, I came back from the service and resumed work as publicity director and began a new motion picture program which had a simple objective, promoting Maine farm products to city audiences. We were fortunate to be in on the ground floor when the industrial film industry began its tremendous postwar growth, due to the development of magnetic sound recording and the success of military training films. And television was just around the corner.

Last fiscal year, 163 eastern television stations gave us 595 free showings of our documentary films. That represents a substantial growth from the previous fiscal year, when 143 stations gave us 451 showings. The year before that, 94 stations gave us 250 showings. We hope to continue to grow, but our growth will very possibly not be at the present rate.

Now, what is our actual audience on television? In this last fiscal year, using the most conservative yardstick that we have been able to develop, our films--13 different subjects on Maine farming--had a television audience of 33 million people. We were given nearly 116 hours of free time.

This is not a one-way street. The stations get the benefit of free subjects, primarily of an educational nature. We are actually, as far as eastern television is concerned, the second or third largest source of documentary films on farming. The largest is, of course, the U. S. Department of Agriculture motion picture service.

Our program does not limit itself to films for television. The original photography is in color, in 16-mm. or 35-mm., and we have a worthwhile school, club, and church audience. Last year the Modern Talking Picture Service secured 1,102 showings of 2 of our films, and the Farm Film Foundation secured 628 showings of 3 films. These showings are largely to vocational agriculture and home economics classes. We ourselves mailed 352 films to borrowers other than television stations--to schools, clubs, trade conventions, and so forth.

Our film "Maine Barbecue," which some of you saw at Memphis 2 years ago, was shown 4,203 times in 571 east coast theaters, with a total theater audience of 828,161. These theater bookings are arranged for us by the Modern Talking Picture Service.

I should explain that our motion picture program is carried on in the Division of Administration, supported by promotional funds. There is no tie-in with the marketing project, except that Bill Charron and I coordinate our activities. Market service men carry film lists and call on television station personnel when time permits. There is no tie-in between the Maine Potato Commission and its advertising, and our film program.

There is specific mention in your workshop program of "short motion pictures." To me a short film is something under 15 minutes in length. Most of ours come in that category.

Our films such as "Maine Barbecue," "Potatoland," "Blueberryland," "International Maple," "Milking Time," and "Fourth Dimension" all run approximately 9 minutes, which we find to be an ideal length for the average short film for use on television. This statement stands in opposition to tradition in the television industry. Many station program directors will tell you it just isn't so. For regular programming, they would like to see films of approximately 14 and 29 minutes, to fit within standard time segments. I have nothing against a 14-minute film, provided it takes that long to tell the story in an interesting manner, except that a film of that length is impossible to fit into a 15-minute farm or home and garden show which features a live personality, short interviews, news, and so forth. Additionally, our showing reports indicate that the 9-minute films are in common use for program fill--after football games and in programs of feature movies. Obviously films of this length combine well with others of random lengths to fill the standard half-hour segment in programming. I might comment that half-hour fact films are costly to make.

Most of our Maine films are stories of the planting, culture, harvesting, and marketing of a farm product. We try to tell a story packed with information, and free from commercialism. It is enough to remind people, through films which are fundamentally good public relations for all agriculture, that Maine markets potatoes, blueberries, apples, chicken, and so on. It is our intent in distribution to develop stations as regular users of our films, to secure 4 to 6 or more showings a year on about 100 stations, rather than 1 or 2 a year on most or all of the stations east of the Mississippi. The reason for this is plain, I think, in that we are basically interested in keeping the name of Maine as a producer of food in the memory of viewers. A story on blueberries reminds one of potatoes, and vice versa.

Ours is a one-man production operation, in that all the technical steps are carried on by me. I do the filming, the sound recording, the editing, music selection, and final cutting and matching. The parts of the job which we have done elsewhere are the film processing and printing, and the transfer of our magnetic sound to optical, which would, as with processing and printing, require a large investment in equipment.

Film ideas may come from anyone in the department or from growers or shippers. I try to amplify and amend film suggestions to fit the needs of our program, and then secure the Commissioner's approval. We release one to three films a year, with each project in production from 6 months to 1½ years.

Our total expenditures for both production and distribution, including salaries and miscellaneous fees of all sorts, amount to about $25,000 a year. We could contract for one or two short films a year for this same amount, but that would provide for no prints and we would not have a distribution program, which seems to be the key to success in television. It is also a sad fact of life that you have to provide liaison personnel when you contract for films. That's as costly, in executive time, as having a producer on the payroll--assuming that the latter is a specialist in farm films. Despite this view of the economics of the situation, I hold no particular brief for a one-man film operation, partly because there seem to be few young one-man production units coming along.

If you're interested in reviewing the possibilities in employment of film personnel, I refer you to the second issue of the "Reporter," published by Motion Picture Laboratories of Memphis. This is a current publication and treats the matter in detail. I have just one suggestion; if you hire a man to make films, hire one who has made a film, and can and will show it to you, and explain in detail the part he had in its production.

Having digressed a bit, I'd like to get back to the story of how we make a film. Except when a film includes professional actors, when every move has to be charted and described, the only writing done before photography is the preparation of an outline--our theme, what we must show visually to make the points that contribute to our theme. This is obviously a matter for collaboration between me and any specialist or specialists concerned. On a couple of films, I've been my own specialist; on others, several people have been involved.

Once the sequences are filmed, they have to be edited to tell the story as completely as possible without sound. Then a narration must be written to supplement this visual story. This is a matter of the specialist sitting down with me to get the job done. Either one of us may supply most of the words. It doesn't matter who does the bulk of the work or gets the credit. Usually the specialist has special considerations. I have technical film requirements in mind, and, for want of a better phrase, the overall public relations slant.

Perhaps my references to "theme" have not been too clear. For example, the theme of "Potatoland" is that the potato industry is in a state of change, changing its varieties, its cultural methods, its packing and shipping to conform to the changing needs of housewives. The theme of "Climate and the Apple" is that Maine's unique climate makes it possible to grow apples of rich flavor and color. Selection of the right theme and holding to it seems to me to be important in the production of a film which will have unity, coherence and emphasis.

Films shorter than 9 minutes are undoubtedly in demand. I'd like to make some 5 or 6 minutes long. They would have excellent acceptance on television. In only one length has the television industry reported serious lack of acceptance. One- and two-minute so-called "public service" trailers, made by industries for publicity purposes, have not had sufficient use to justify their continued production. Television Magazine reported this last spring, quoting a recent survey. This is not to say that local use cannot be secured. We occasionally make one-minute silent trailers, with commentary to be read by the station announcer, on an event like the Maine Broiler Festival. These are for advance use, based on footage from previous festivals.

Saying that we make films which are stories of products is perhaps an oversimplification. I made, for example, "Part-Time Farmer," a film which studies this trend in agriculture, and presents it as we see it in Maine. "Fourth Dimension" is a health film, mentioning most foods, and pointing out to teenagers that good food and exercise now are essential to a healthy middle age.

Our newest film, not yet released, is on a subject which is very close to you. We're going to show you an excerpt.

"Market Man," Kodachrome, 13 minutes, 20 seconds, is the story of the development of a new career in the food trades, the market service man. It was filmed this year in Maine, Massachusetts, New York, Pennsylvania, Virginia, South Carolina, and Florida. It tells of changes in food buying, of shopping centers, shopping malls, terminal markets, and chain warehouses; of the people in the food trades who work to give the housewife better food products, properly graded and packaged.

In conclusion, I'd like to wonder aloud whether we, as public relations and marketing people, are spending enough time and money in getting the favorable attention of the television audience for the products we are interested in. According to a recent report in Television Magazine, the food industry's top advertisers in 1958 spent 40 percent of their advertising budgets on network television, 11 percent on spot television, 27 percent in newspapers, 20 percent in magazines, and 2 percent on network radio. Are we devoting equal attention to the patrons of a magic box?

CONCLUSIONS AND RECOMMENDATIONS

of Work Group on Publicity and Public Relations

This year there was an almost complete reversal in the type of personnel attending the sessions of this work group. In this year's sessions approximately 85 percent of those attending had professional training or background in information or promotional work. At Springfield last year, only 3 or 4 of those attending were professionally trained in information work. It was the recommendation of this group that the work group on publicity and public relations be continued next year.

The group would like to see included on the program presentations by representatives of the wire services, the metropolitan press, the weekly newspaper, the trade press, and, if time permits, representatives of commercial radio and television.

It was the consensus of the group that a well-trained communications specialist can be of great assistance in working with a State department of agriculture in formulating and pursuing a progressive marketing program. State departments are urged to afford communication specialists the opportunity of attending the workshop where they can exchange ideas and techniques with their colleagues from other States and regions. It is believed that this action would contribute toward improving the marketing program nationally, and might result in some savings to individual States through elimination of needless duplication of effort.

There were several instances reported during the sessions that revealed that, in some areas, there is a lack of understanding of the necessary function of market news, and how it is gathered and distributed. The group recommended that communications specialists and other people work together to improve this situation.

The group expressed concern over the lack of liaison and understanding in some States among the various agricultural agencies. The expression of the group was that the first step toward improving this situation must be improved public relations among these agencies and the determination to do the job first and worry about the credit later.

There was extended discussion of the terms publicity and public relations and what misinterpretations of these terms might arise. It was suggested by the group that the planners for the next workshop consider titling this work group "Agricultural Communications" instead of the present "Publicity and Public Relations."

The group agreed that there is a definite place in our information programs for films, exhibits, and other visual aids. They further agreed that this workshop has afforded good opportunities for reviewing each other's work, for exchanging ideas, and taking home new knowledge that can be put to good use.

DAIRY PRODUCTS

Work Group Sessions

THE NATIONAL DAIRY COUNCIL PROGRAM

Hugh McWilliams, Jr.

Hugh McWilliams, Jr., of the National Dairy Council, traced the growth of the Council. He discussed the range of activities of the organization, including its promotional publications, research grants, and cooperation with other organizations, both public and private, to increase the sale of dairy products. (Summary of speech not available.)

ACTIVITIES OF STATE DEPARTMENTS OF AGRICULTURE IN SUPPORT OF NATIONAL DAIRY COUNCIL AND AMERICAN DAIRY ASSOCIATION PROGRAMS

W. Henderson May
Illinois Department of Agriculture

The Illinois dairy marketing project began on April 1, 1955, with matching funds provided by the American Dairy Association of Illinois. The program continued under this setup until July 1, 1959. Because the ADA of Illinois chose to withdraw their financial support, in order for the project to be continued it was necessary for these funds to be provided by the department of agriculture. The management of ADA felt the funds they were providing could be used to better advantage in the expansion of their merchandising program. The change in source of matching money has not altered the scope of the work.

The line title of the project as approved reads, "The purpose of the project is to help plan marketing programs and carry out the programs in cooperation with dairy farm cooperatives, dairy processors, retailers, and other organizations and individuals, which will be to the best interest of the continued health and welfare of our nation; increasing the per capita consumption of dairy products in Illinois, especially at the teenage level."

Programs aimed at accomplishing the purpose of the line title should be based on statistical facts typical of the area where the program is to be carried on. A survey to determine the participation in school lunch and special milk programs was made of 50 representative cities, half with populations above 25,000 and half with populations below this figure. With the exception of one city, the cities above 25,000 had low percentages of participation in the school lunch and special milk programs. The exact opposite was true of those cities below 25,000 population. The advisory committee, made up of members of the ADA Board of Directors, suggested the initiation of some type of program in a city over 25,000 population, which would have as its objective increased participation in the school lunch and milk programs. It might be noted here that the results of the original program carried out in Springfield changed the entire approach to other work.

A survey of eating and milk drinking habits of 1,175 children in the fourth, fifth and sixth grades, evaluated by a committee of nutritionists, revealed that a large percentage of them had very poor meals on any given day, and 32 percent came to school with little or no breakfast. Extending the efforts of a 3-month extracurricular nutritional education program, the nutritionists charged the project leader to find a program of basic health and nutrition education which could be integrated into the present curriculum. Without the services of an affiliated unit in central Illinois, it became necessary to consult National Dairy Council as to ways in which their health and nutrition teaching aids could be made available to Springfield schools. After a meeting with the 4 local processors, they decided to furnish the necessary funds. Let me hasten to point out that this setup is of one-year duration, and in no way is intended to set a precedent for other areas to attempt to supplant, in part, the entire National Dairy Council program.

However, we in Illinois are very fortunate in having a close working relationship, one directly and one indirectly, with two of the finest Dairy Council directors in the entire organization. They are Mrs. Margaurite Morris in Rock Island County and Mrs. Marie Harrington, St. Louis Dairy Council, which includes Madison and St. Clair Counties, which are directly across the river from St. Louis. Because of the interest of many persons in the dairy industry in central Illinois, we are cooperating with National Dairy Council in doing some of the field work necessary to form an affiliated unit. The Department is interested in helping with the formation of an affiliated unit or units in central Illinois. First, with adequate nutrition education in schools, better eating habits will be formed; and second, all other ages are exposed to some phase of nutrition education, and these ultimately contribute to the betterment of the health and economic status of our Nation.

After the results of the Springfield survey and educational project were published, J. Howard Quick, Superintendent of Riverdale School District No. 100, Rock Island County, asked the department to help solve some of their school lunch problems. A survey based on the Springfield project was conducted, the results being very similar to the results of the original project. The main object was to refute the old adage, "It can't happen here." In order to obtain the properly qualified persons to guide this program, the director of the Quad City Dairy Council was asked to be a member of a steering committee.

The Riverdale School District survey, along with a program, "Teen Time Food Fair," under sponsorship of 4-H Clubs of Rock Island County, added considerable interest to the teaching of health and nutrition in the Quad City schools. Under the guidance of the Director of the Quad City Dairy Council, a followup program is being developed which will run over a 3- or 4-year period.

The program with the Springfield schools, as mentioned previously, is being carried out in the fourth, fifth and sixth grades. The project leader is the liaison officer between the dairies, schools, and the Dairy Council. As a result, most of the field work to ascertain the feasibility of a Central Illinois Dairy Council has been done by the project leader because of the interest of the dairy processors in the area to help schools with their milk programs. Administrators and teachers are very interested in a total nutrition and health education program. The only program that seems to satisfy this prerequisite is the National Dairy Council program.

With nutritionists and other qualified people leading the way, the National Dairy Council program helps to show many educators that school lunch is not merely a feeding station, but that it is a teaching tool.

Thus far the work described was started in cooperation with the American Dairy Association of Illinois, but completed with the National Dairy Council.

In October 1957, work was started on a project, in cooperation with the American Dairy Association of Illinois, to study route salesmen's habits, methods of selling, and general knowledge of selling and of the product. The field work took about a year and a half. Using the knowledge gained, a curriculum for night classes for dairy route salesmen will be held in cooperation with the Illinois Vocational Board. With their approval, such classes can be conducted by the Adult Education Department of any local school district.

Sixty percent of the instructor's salary will be paid by the Illinois Vocational Board, and the balance by the route salesman and/or the dairy.

This week the national office of ADA is unveiling a program aimed at bringing the route salesman and Mrs. Housewife to a better understanding of her needs for dairy products as well as his ability to properly supply these needs.

In Illinois the project is aimed at coordinating the efforts of as many of the existing agencies as possible in order to "ultimately contribute to the betterment of the total health and economic status of our Nation."

TYPES OF COOPERATION BETWEEN VARIOUS COMMODITY GROUPS AND STATE DEPARTMENTS OF AGRICULTURE IN MARKET SERVICE AND PROMOTION PROJECTS

David M. Bartholomew
Kansas State Board of Agriculture

The purpose of this report is to "reveal how many State departments of agriculture are cooperating with other agencies and the types of cooperation" involved. It is intended that such a presentation will supplement the report from Illinois which describes their specific program with dairy groups, by giving an overall view of the various commodity promotions in other States. This should "provoke some thinking as to ways States might improve their present programs, since some segment of each national organization should be operating a program in most of the States where there are matching fund programs."

A questionnaire was developed which it was hoped would cover the situation in most of the States and permit ease and simplicity in reporting the information described. Forty-seven forms were sent out. Thirty-four replies were received. Of these, 12 either had no projects within the stated categories or had no promotion projects to report. This left 22 States reporting projects within the scope of this survey.

The types of cooperation which this report endeavored to cover were those involving financial or personnel assistance. The portions relating to financial help were in the areas in which the use of Federal matching funds are specifically exempted.

However, it was not easy for some States to indicate cooperation and assistance within the scope of the survey headings. This was exemplified by Michigan, for example, were a "State appropriation of $50,000 is allotted by the department of agriculture to private agencies for promotion of their products," and by California, which has "over 30 marketing programs in operation at this time of which 20 carry on promotion programs. All of these programs are self-financing, and no State or Federal funds or commodity organization funds are received."

In some States the department of agriculture is the agency collecting promotional funds for various National or State commodity groups, with these funds or a portion of them being assimilated into their total budget, but designated for use in promotion of that specific commodity. When such an arrangement is in effect and the State indicated cooperation under the questionnaire headings, this was included in the summary of this survey. In New Jersey, for example, it evolves that the department of agriculture makes contributions to national commodity programs. The State then is allowed a literature equivalent of a certain percentage of the contribution, which in the case of the Poultry and Egg National Board is 10 percent.

Some States included in their reports the cooperation of State economic development commissions, farm bureaus, extension services, experiment stations, and cooperative councils. These were deleted from the final summary since only specific commodity interest groups were intended for inclusion in this report.

Since this workshop group is primarily interested in dairy products promotion, it may be worthwhile to relate here some of the replies pertaining to this commodity.

"The American Dairy Association of Wisconsin has a specific job of administering the deduction program to support the national A.D.A. office. They do, however, retain 20 percent of their deduction for administration and for in-state cooperative promotion efforts with our department, such as June Dairy Month, State Fair displays, and other minor projects. Frequently we share the cost of these promotions." It might be well to add here, however, that while this 20 percent arrangement is also in effect in other States, the volume of contributions is smaller, resulting in the entire 20 percent being spent in administration and little or no money remaining for promotion programs.

Maine reports that the Dairy Council and Milk Committee give "substantially more funds than we are matching. In the other services, such as furnishing us with point-of-sale material and exhibit space these are paid directly by the committee."

From Michigan it was learned that the "Michigan Department of Agriculture matched certain promotional expenditures of the A.D.A. of Michigan on State promotional programs. State funds provided for such promotion approximate $12,000 a year. The amount allocated to the American Dairy Association is only a small amount of the total amount spent by A.D.A."

In New Hampshire the agricultural promotion program receives about $5,000 a year from the planning and development commission. This fund is used in part to promote dairy products.

From the foregoing information it may be seen how similar are the promotion projects in some States and how widely they vary in others. Admittedly there are legislative and economic hurdles in some States which will make variation and expansion of present programs difficult or impossible. But it is hoped that from this report all States will receive ideas which will help in broadening their approach to the development of more effective market service and promotion programs.

After examining this information it may be that you will want to pursue in further detail certain specific types of cooperation now in effect in another State, to see how such cooperation may be effectively applied to your program. If you have questions about which States are engaged in the various types of cooperation with any specific commodity group, as shown in our survey, I shall be glad to supply you with this information.

USING THE NUTRITIONAL APPROACH TO PROMOTE DAIRY PRODUCTS

Constance Hilton
President, Illinois Dietetic Association

With food the most urgent daily need of our lives, it is hard to believe that people can utterly ignore much of the basic information that has been provided for us.

Too many of us go blithely along thinking that our wealth and our strength will solve every problem. However, we are, and can be, no stronger than the people of our Nation. Without strong, healthy people, many of these miracles will never happen. Without good nutrition, we cannot have these strong, healthy people.

Scientific studies have shown that large percentages of our people are poorly nourished in spite of our vast stores and food resources. The saddest part of this is that many of them are our children. This fact that children are poorly nourished has been pointed up many times by several important national surveys. However, what is more important to Mr. and Mrs. Average Citizen is that these same facts are being brought out in surveys that are being done right in our own communities.

From surveys of meal patterns and eating habits which were carried out in 7 schools of the Riverdale Community District in western Illinois, we have these findings:

1. Only 8 percent of the meal patterns were adequate for the day.
2. Breakfast was the poorest meal of the day, with approximately 72 percent of the children showing poor or no breakfast patterns.
3. Noon lunch or dinner was the best meal of the day, with only 41 percent having a poor meal pattern. Along with this finding, it was interesting to note that nearly half of the school children participated in the schools' hot lunch program.
4. Generally, the elementary children showed better meal patterns than high school students.
5. Schools with high percentages of rural students had slightly better meal patterns.
6. The meal pattern adequacy seemed better for high school boys than for high school girls. This finding seems to follow a national trend.
7. Snacks played a predominant part in the diets of the children, and are mostly concentrated caloric foods with little or no food values.
8. Seventy percent of the children included milk as part of each meal pattern, although the total amount of milk for the day was not known.

9. Seventy-five percent of the students indicated that they would drink half a pint of milk each morning if it were available.

These local surveys are of particular value because they give "on-the-spot" facts which can be used in developing a nutrition education program for a school system or a community.

Truly, we have a problem, a serious one. Yet from the scientific point of view it is a good problem, because it is one we can do something about. We may be forced to take a good long look at ourselves, to put forth some effort, to evaluate our effort, and perhaps even to change our ways, but it can be done.

Science gives us the facts and throws down the challenges. What we do about them is up to us. How can we determine whether or not our diet is adequate? This was a question that was asked for many years before we had the answer. The nutrition yardstick which we use as our measure of adequacy went through several changes before its present form. Some of the early estimates were based upon what people actually were eating rather than what they needed.

Even after needs were recognized, many years elapsed before methods were developed for quantitative study. Gradually, means of recognizing mild deficiency symptoms were developed along with criteria for distinguishing between minimum requirements and optimum allowances. All should appreciate, however, the decades of labor by thousands of research workers that have made possible the present-day estimates of dietary allowances.

Early attempts to define human requirements for specific nutrients were made by the U. S. Department of Agriculture and by the League of Nations Health Committees. In 1940, the Food and Nutrition Board was appointed by the National Research Council. As a result of long and careful consideration, they published their first table of Recommended Daily Allowances for specific nutrients in 1941. These basic recommendations for specific nutrients are what we aim for when planning adequate quantitative diets.

A few facts concerning dietary needs become apparent as we study some of the basic recommendations from the 1958 revised table of Daily Dietary Allowances. Three nutrients, calories, protein, and calcium, with few exceptions, set the pattern for the other nutrients. By the time a child is 9 years old, his need for protein and calcium is equal to that of his parents. The caloric need of the 10-year old has equaled that of his mother. During adolescence the need for calories, together with the protective and growth-producing materials, of both boys and girls greatly exceeds that of either parent. The period of greatest need corresponds with the period of fastest growth. As adults grow older, the caloric need decreases, but the need for the protective nutrients remains constant.

With this insight into our food needs, we are ready for the next problem--translating proteins, vitamins, and minerals into the foods we eat each day. For many years, nutritionists have offered homemakers easy guides for meal planning. These may differ slightly as to color, wording, or design, but they give essentially the same advice. Today most of these meal pattern guides or charts follow two definite plans. One plan employs 7 basic food groups and the other 4. Both types of charts are valid teaching devices, and the choice should, therefore, be made on the adaptability of the plans for each specific group. Studying food patterns should give a clear picture of the importance of dairy products in our diet. Dairy products are, in both types of pattern, one of the major food groups.

Milk is a leading source of calcium, essential for the development of bones and teeth, required for the proper functioning of muscles and nerves, and for normal clotting of blood. In addition, milk furnishes high-quality protein and provides many other vitamins and minerals as well as carbohydrates and fats. Cheese and ice cream supply these nutrients, too, but in different proportions.

Of the two protective nutrients in our discussion, a minimum amount of milk or milk products, approximately two cups, will supply about one-fourth of the protein and two-thirds of the calcium we need each day. However, even milk, which comes close to being a perfect food, cannot supply all the nutrients we need.

Each of these broad food groups listed in the daily food pattern guides has a specific job to do; no single group provides all the nutrients, but together they furnish a major share of the protein, minerals, and vitamins recommended.

This "basic food pattern" should be used as the foundation for a good diet. To round out meals and satisfy appetites, we may choose more foods from the groups, as well as adding foods not specified, such as butter, margarine, sugars, sweets, baked goods, or others as we desire.

In other words, these "extras" have a definite place in the diet when used as intended--in addition to the basic foods. These extras as well as the basic foods should be of primary interest to dairy people. Many of these elective foods in the diet are chosen from the dairy products group.

In planning merchandising for these choices, it might be well to keep in mind that the general nutrition pattern is gradually changing. People are including less fat in their diets than they did several years ago. This change has been caused by everything from our streamlined existence to the latest, if controversial, word on cholesterol.

The dairy industry people are in a truly enviable position from the merchandising point of view. You have a real "quality" product to sell. Then if you take a little time to know your product, understand its place in the diet, and learn what it contributes to total nutrition, you can do a real service--help people help themselves to better health.

PROMOTING SPECIAL MILK PROGRAMS IN THE SCHOOLS

York Kiker
North Carolina Department of Agriculture

Perhaps it would be more appropriate if we renamed this talk "The Role of a Home Economist as a Dairy Marketing Specialist in a Department of Agriculture." Then my remarks would be covered adequately, for they will not be limited to the Special Milk Program. You will agree that the dairy industry has something of real value to market, and we are justifiably proud of these products. Not only will the dairy industry profit by increasing markets, but the health of our citizens will benefit from adequate consumption of milk. Since we are primarily a fluid milk State, "milk" is used instead of "dairy products."

It is of great concern that more departments of agriculture are not using home economists for the sole purpose of promoting dairy products. Much has been done in the dairy industry for herd improvement, quality control, and packaging. All of these are splendid and necessary, for nothing can undo our promotional efforts faster than a poor-quality product. It seems a gap exists between production and distribution and reaching the actual potential consumer. Dairies are doing their own advertising and selling, but trade names often close doors that are open to home economists and nutritionists.

During the first year of the Special Milk Program, we had the experience in North Carolina of having a large sum from our appropriation unclaimed. An adequate supply of quality milk was available to our children at a modest price. Our consumption in North Carolina is below the national average and the recommended amount for good health. In view of these facts, why didn't more people take advantage of the opportunity? People simply don't automatically eat what is wholesome or economical, but more nearly what they want. It is up to us to help create the desire and market demand. There is a limited amount of food a person can consume, and we want to be quite sure that milk and the other dairy products have their rightful place in the diet. The Dairy Councils are doing a splendid job of direct work with consumers, but that doesn't relieve the State departments of agriculture of their responsibility or opportunities.

I want to tell you something of the type of work we are attempting to do in North Carolina to help create markets. Please don't think for one minute we feel we have all the answers--far from it, but it is a matter of sharing our experiences. With only one person working in dairy marketing to cover a large State, it is impossible to do the concentrated work we would like. A limited amount of money for promotional materials is also a handicap.

In our planning there are several factors we try to keep in mind. We aren't proud of it, but we know our milk consumption is far below recommended amounts for adequate nutrition. We are cognizant of the fact that poor nutrition is probably caused by (1) economic conditions, (2) lack of knowledge (ignorance sounds entirely too harsh), or (3) indifference.

The major portion of my time is spent in direct meetings and contacts with schools. The School Lunch and Special Milk Programs are specifically under the direction of the department of public instruction and their area school lunch supervisors. Their duties of seeing that nutritious and wholesome meals are available and of handling the mechanics of the programs leave little time to promote lunchroom or Special Milk Program participation. We have an excellent working relationship. They refer work to me where milk consumption is low. I have assisted in workshops for the lunchroom managers.

As you know, 1/2 pint of milk is a requirement under the Federal program. Better lunches are conducive to better lunchroom participation, and finally greater milk consumption. Our lunchroom people are sold on milk and have done a tremendous job of getting the majority of our 2,200 schools in the State approved for one or both of the Federal programs, yet there are a few small schools not participating. We have encouraged dairies to help small schools to locate refrigerators, even the home variety, to keep milk if it is at all practical for the school to be included on the milk route. When any problems concerning milk or its handling are observed, suggestions are referred to the proper dairy for consideration and action. Also, mimeographed letters have been sent to dairies with ideas as to ways they could help with the Special Milk Program.

Milk is available to most of our children, but that doesn't necessarily mean they drink it. It is necessary to do a selling job. In the course of a year, meetings are held with approximately 30,000 children and their teachers in groups of around 100 to 125 to discuss milk with an illustrated demonstration. While the children are being told about milk, suggestions are added for classroom projects for the teacher to use as a followup. As fine as our teachers are, many of them are from areas where dairying has been extremely limited, and we want to help them be aware of the value of dairy products in the diet. After the talk, teachers are furnished with supplementary materials and are talked with informally. When possible, meetings with teachers are held after school to discuss the School Lunch and Special Milk Programs and how these can fit in with their classroom studies on health. A teacher who is really "sold" can do wonders with a class. The School Lunch and Special Milk Programs are integral parts of the total school program, and we endeavor to see that they are used accordingly. Well-fed children make better students.

Principals are asked to remind teachers that milk is available, and is an excellent food bargain, other than at lunch time. Teachers are urged to know their children and their needs. Perhaps a milk break is needed early in the morning for youngsters who had a limited breakfast, or possibly none at all, followed by a long bus ride to school. Some schools are even providing a low-cost, simple breakfast including milk. Possibly a midmorning milk break is needed for children who will have a late lunch, or maybe the milk break is feasible in the afternoon for the early lunch group. Some children bring packed lunches, and they need to be encouraged to buy milk. Children like parties, and we try to show that dairy products can be used in many different forms. Teenagers are urged to enjoy more milk to improve their athletic ability and their appearance. We try to show teachers some ways of using the program through careful planning. Each teacher can fit the milk break in with her own plan of work; the possibilities are countless.

Perhaps you are wondering how contacts are made with schools. Usually a week or two is spent in a county, or whatever time is necessary to work in each school. All counties cannot be assisted during a year, but our feeling is that it is better to concentrate on a few counties per year. Work is not done in Dairy Council territory, for they have full-time workers. Most of our counties have an educational supervisor who works under the superintendent. An effort is made to attend their meetings and get to know both the supervisors and superintendents personally. Fortunately, many of the superintendents are my friends, for the North Carolina Dairy Products Association has been farsighted enough to finance a dairy bar at the annual summer conference of school superintendents. It has been our privilege to operate this dairy bar, which is an excellent opportunity to do a public relations job and to get acquainted with many of the superintendents. Though the superintendents give the final approval on work in the county, contacts are usually with the supervisors who arrange the schedule of of school visits and assist with the work. They have been most helpful in doing followup work.

Mention has been made of materials used with schools. We use many Dairy Council materials and our budget allows us to buy a few for samples. Schools are furnished catalogs and urged to buy additional materials. Local dairies have been cooperative about helping finance materials and projects in their own areas. The American Dairy Association of North Carolina has furnished us with materials. We have developed and mimeographed simple materials for distribution. Textbooks do not change rapidly and we find teachers eager for up-to-date and supplementary information. We assist with special materials and projects as much as possible.

Changing eating habits is slow; however, a review of progress is encouraging. In the 1958-59 school year, 129,755,097 half-pints of milk were served to children, and over 38 million of these were plain milk reimbursed under the special milk program. The initial appropriation for this program was used and additional funds were secured to make our total close to 1-1/3 million dollars. In 1954-55, a total of 104,570,883 half-pints of milk was served in schools. This was the first year of the Special Milk Program, and part of the funds went unclaimed, as mentioned earlier.

Dairy marketing work does not end with schools. I have been closely allied with State and local parent-teacher associations. Adults do hold the purse strings and furnish guidance to youth in forming patterns of eating. Also, PTA history shows interest and help in developing the lunchroom program.

Close working relationship is maintained with other State agencies, particularly the nutritionists from the board of health and the Extension Service. We assist in securing dairy information, especially for the 4-H dairy demonstration program. Active participation in professional organizations has culminated in joint programs beneficial to the dairy industry. Mass media have been used to tell the dairy story.

On the State level, this is the only service program dealing specifically with milk and the only one that works directly with children. One person alone cannot do the job that is needed. When we can stimulate and assist others to help us promote dairy products, we feel our North Carolina dairy industry will continue to make the steady and consistent progress of the past few years.

We shall continue to promote the School Lunch and Special Milk Programs but shall not stop there, for schools are only 5 days a week and 9 months a year. There is still much work to be done and many ideas to be tried in dairy marketing, for we want our people to enjoy milk and other dairy products every day and every month.

ACCOMPLISHMENTS OF FLAVOR IMPROVEMENT PROGRAM IN VERMONT

Harold O. Clark
Vermont Department of Agriculture

Milk sales promotion programs can be effective only if the dairy industry produces milk and dairy products that are consistently excellent in quality and flavor. My work is to try to eliminate any conditions that might damage the flavor of Vermont milk. My efforts are made in two directions; first, to get the producers to make a clean, untainted product; and second to make sure the handlers process and deliver without injury to the flavor.

In relation to producers, I have tried to make flavor control part of the regular quality program. Samples are taken twice monthly for bacteria counts and are also tasted for flavor. To make this more workable, we are using 45-cc. amber glass sample bottles which are adequate in size and prevent oxidation from light exposure. After raw and pasteurized plate counts have been made, the technicians taste the samples and record the results on triplicate forms. Fieldmen then go to the farms and try to get corrections made whenever samples taste less than good. The principal farm flavor hazards are: Malty, feed, barny, rancid, and oxidized. I will discuss each of these a little.

The malty taste, which is caused by high bacteria count, is fairly well controlled by good sanitation, which has been in force for many years. Feed taste is most noticeable in the spring when the cows are first turned out on new grass. For the first few days, cows should be turned out forenoons only and fed hay in the stable in the afternoons. As soon as they are accustomed to grazing, continual pasturage on excellent feed, with hay available, is good practical control. In the stable season, silage or other strong feed should not be available to cows during the 4-hour period just before milking. To control barny flavor, it is necessary to have clean cows, stables, yards, and lanes. It is also essential to provide good stable ventilation. Any odor in the air that a cow breathes is transferred into the taste of the milk she gives. Most stables need exhaust fans to remove the foul air, with adequate inlets, properly distributed, to let in fresh air. Many ventilating fans do not work properly, because of insufficient and improperly spaced inlets. I have been in stables when the exhaust fan speeded up when the stable door was opened. This showed that air was not being moved through the stable, but that a little vacuum was being created by the fan or fans. Another serious failure of ventilation is large inlets in one part of the stable and no air moving through other parts of it.

Rancid milk can be a very serious problem because it can make milk with which it is mixed rancid also, especially if it is slopped or foamed. It seems to be associated with late lactation and low production. Producers are told that each cow should have two full months of rest period. She should be kept in good production until time to stop milking her and then stop. Many times foaming has made rancid milk much worse. Pipeline milkers should not be installed so that they will foam the milk. Milking machine companies complain about being used as whipping boys in relation to rancid milk, but up to now they have not accepted their share of the responsibility to prevent it.

Oxidized milk from the farm seems to come from susceptibility which partly at least relates to diet deficiency such as occurs at the end of winter, after a long period of barn feeding. As far as I know, it is always precipitated by contact with copper, or brass which is half copper, or iron or rust. Probably rust is worse than the others because it is more soluble. Brass milker pailheads and teatcup claws should be replaced with stainless steel. Tinned pails and strainers should be replaced with stainless steel because the acid milkstone remover also removes the tin from the pails, and many times new pails become a flavor hazard soon after their first use.

I should note that health of the cows is very important, since any sickness will injure the flavor of the milk and often cause off-flavors that are difficult for the fieldmen to trace. The age of milk under the present methods of handling complicates some of the flavor problems.

The flavor work on the milk shipped out of the State is done by the milk companies through their laboratories and by their fieldmen under my supervision. The milk retailed in Vermont is controlled by the handlers, State inspectors, and department of agriculture laboratory. If any air is mixed into milk during processing, it will become oxidized, and also exposure to light will cause the same taste. Many times from tasting samples in the laboratory we are able to trace and eliminate damaging plant practices.

Probably light does more damage to milk flavor than any other single cause or perhaps all other causes combined. I have made quite an extensive survey of light damage to milk in glass up to the time the customers use it. Following is a summary of the results of that survey. You will note that I took milk from over 100 house refrigerators and measured the light damage.

You will also note that milk from restaurant dispensers was good, while the same lot of milk from home refrigerators in transparent glass was injured enough by light to be between fair and poor. Under the same conditions, milk in amber glass remained good. There is a small study of milk in paper containers handled through food stores which shows about the same damage as house delivery of milk in transparent glass. More recently I have taken a large number of samples of milk in paper from most of the principal food stores in Vermont with about identical results. Since the beginning of my work with milk flavor I have promoted the use of amber glass milk bottles for home delivery and now a considerable part of the milk retailed in Vermont is in amber glass.

I have tried to convince many in the dairy industry that store paper should be made so that it is not transparent at all. This is possible because I know that some milk in Canada is packaged with a sheet of aluminum foil between the layers of paper. Stores wish to display their merchandise, and it is not practical to expect them to eliminate the lights from refrigerated display cases, so it is very necessary to make milk containers nontransparent. So far I have not made much progress toward this achievement.

LIGHT DAMAGE TO MILK UNTIL USED BY CUSTOMERS IN THEIR HOMES 1/

Dispensers Compared with Flint Glass (Quarts)

8 Restaurant dispensers	Average score	39	(Good)
76 Home refrigerators	" "	36.5	(Between fair and poor)

Dispensers Compared with Amber Glass (Quarts)

3 Restaurant dispensers	Average score	39.3	(Good)
25 Home refrigerators	" "	38.8	(Good)

Dispensers Compared with Half-Gallon Paper

1 Restaurant dispenser	Score	39	(Good)
5 Home refrigerators (route delivered)	Average score	38.5	(Good)
5 Store refrigerated display cases	" "	37.5	(Fair)

Dispenser Compared with Quart Paper (Pure-Pak) from Stores

1 Restaurant dispenser	score	39	(Good)
10 Store refrigerated display cases	Average score	36.7	(Between fair and poor)

1/ Study conducted by several Vermont retailers and Harold O. Clark during October and November 1958.

The work to make the Vermont milk flavor program effective has really been done by the entire dairy industry in the State. This includes the milk plant operators, laboratory technicians, and fieldmen as well as Massachusetts and Vermont dairy inspectors, county agricultural agents, and certainly the producers themselves who are convinced that it is just plain good business to make an excellent product. The means I have used to make milk flavor control regular and continuous have been:

1. Interviews with milk handlers.
2. Assistance to laboratories in tasting samples.
3. Assistance to fieldmen in correcting problems at farms.
4. Talks to groups of producers, fieldmen, and handlers.
5. Articles concerning flavor problems in Agriview and other local farm publications.
6. Promotion of a milk flavor judging contest for students studying vocational agriculture in Vermont high schools. I think this year the industry will contribute a few hundred dollars for scholarships for several of the high-scoring students.

In short I have tried to use every means available to sell the importance of good milk flavor to everyone in the dairy industry at every opportunity.

Now I would like to summarize the results of the work to date. Feed flavor has been reduced until it is not a serious problem. I think a slight amount of feed flavor is definitely preferable to the flatness or lack of taste resulting from vacuum treatment. Stable ventilation has been improved through the installation of many new systems. Rancid milk has been reduced by better herd management. Oxidized milk has been reduced by the partial elimination of damaging metals. Occasional scorings of all major out-of-State shipments have shown definite and steady improvement. One major company reported to me that in 1956, 20 percent of producer samples were not satisfactory in flavor and in 1959 this figure had been reduced to 2 percent.

The milk retailed in Vermont has probably improved more than the milk shipped out of State. Retailers have improved their equipment and handling. Much amber glass is in use, and retail sales have increased steadily during the last 3 years. I am particularly happy that my relations with all milk handlers seem to be excellent.

Now, finally, I wish to list the things that I think need to be done in the immediate future:

We must maintain continual flavor control at the farm level.
All damaging metals should be replaced with stainless steel.
Many more stable ventilating systems are needed and producers need to lower winter stable temperature to 50° F.
At the retail level, convert all glass to amber; maintain all storage temperatures below 40° F.; particularly on delivery trucks and in store display cases; make all paper containers nontransparent.

This project has been very satisfying to me personally because I feel that any improvements made benefit the dairy industry as well as the children and adults who drink Vermont milk.

HOW WE WORK WITH PRODUCERS AND DISTRIBUTORS IN PREVENTING OFF-FLAVOR IN MILK

Charles F Shelnut
Massachusetts Department of Agriculture

The Massachusetts milk flavor program, with the cooperation of the Extension Service and the University of Massachusetts, has continued its work of improving the flavor of milk offered to the consumer. Considerable progress has been made in establishing the program in such a manner as to increase the number of producers and pasteurization plants receiving a report of the flavor of their milk on a regular basis of at least one report each month.

This work is carried on for milk dealers and producers selling milk in 9 markets by the Chapters of Future Farmers of America studying vocational agriculture in the high schools of these localities. These schools provide a monthly report of the flavor of their milk to 340 producers who ship milk to 38 pasteurizing plants, and also provide the plants with a report of the flavor of the finished product as offered to the consumer.

The program is also carried on in 7 plants located throughout the State in which plant personnel score the milk, and provide their 213 producers with a flavor score at least once a month. In one dairy with 48 producers, the producers receive a flavor report every week and have become so receptive to the idea of the report that they call the plant if the report is delayed for any reason. This plant has served as an example of the effectiveness of regular scoring and reporting of milk flavors. In the initial scorings, more than 20 percent of the producers had serious flavor defects in their shipments of milk. This has improved to the point where less than 1 percent of the producers have a serious flavor defect in milk shipments. The producers cooperate wholeheartedly with the plant in correcting the cause of an off-flavor when one occasionally does develop.

In one market, a unique method of carrying on the flavor program has been developed. With no high school facilities available in this market and personnel limitations hindering the establishment of the program in the plants, the county agent was instrumental in having 4 or 5 plant operators, handling more than 50 percent of the milk sold in this market, join with him and the milk inspector of the city in scoring their milk at regular intervals, using the laboratory facilities of the health department for this purpose. Also assisting in this work was the president of the county farm bureau, who also produced milk for one of the plants. What is most unusual in this situation is the cooperation of the dealers in scoring their competitors' products without using such information to their own advantage. I have seen one plant operator call over a competitor who was more proficient in scoring milk and ask his opinion of the cause of a defect present in his supply.

The practice of spot-checking the flavor of milk as offered to the consumer through purchases of milk in grocery stores, dairy stores, supermarkets, and other outlets was continued and expanded throughout the year. A total of 157 samples was purchased, of which 42 percent were good, 42 percent were fair, and 16 percent were poor. The results of these scorings were sent to the dairies concerned, together with an offer of assistance in overcoming any flavor defects found in the milk. Since a good many of the flavor defects found in these samples, such as those caused by exposure to light or by improper handling which results in the growth of psychrophilic bacteria, are beyond the control of the milk dealer, considerable effort is being directed to planning an effective means of informing chainstores and other outlets of the situation and the need to take steps to protect the flavor of the milk.

A survey of the condition of milk delivered to homes was undertaken in 5 markets located throughout the State. This project involved exchanging milk purchased from milk dealers supplying the market and known to be of good flavor for milk in both unopened containers and in opened, partially used containers which had been delivered to the home. A series of questions was used to obtain a history of the milk obtained from the consumers. These questions included the size of the family, time and place of milk delivery, time placed under refrigeration, type of refrigeration, method of serving, and other pertinent information.

A total of 140 containers were obtained and scored for flavor, with 48 percent scored as good, 22 percent scored as fair, and the remaining 30 percent scored as poor. In viewing the results of this survey, consideration must be given to the fact that a large number of the containers had considerable age, unsatisfactory storage, and other factors in the homes, contributing to deterioration of the milk. The results of the scoring were sent to the milk dealer together with an explanation of the purpose of the project. The information compiled in this survey will be the basis for a seminar to be held at the University of Massachusetts for sales managers, route foremen, and similar personnel.

In all phases of the work of the milk flavor program, instances of serious flavor defects arose from time to time that required individual attention at the source of the off-flavor in order to avoid loss of a market for the milk or, in a few situations, assist a producer in regaining his market. A few of these instances are described below.

A bulk tank producer was threatened with loss of his market because of a persistent and very strong salty off-flavor of his milk. When the usual steps to correct a salty defect failed to effect any appreciable improvement, further investigation showed that a faulty milking machine pump was causing the cows to be only half milked, rapidly dropping in production after freshening and producing milk with the very objectionable salty off-flavor. This situation had existed for about a year, and the latest information is that this elderly producer is now producing approximately double the amount of milk during comparable periods last year with about the same number of cows. Nevertheless, he is still referred to as "Old Salty."

Another instance involved a producer who had lost his market because of a serious flavor defect which occurred during the period when a new program was being established with the Future Farmers of America chapter of the high school of the region. This producer had received several warnings, and finally, after the dairy had received several complaints from customers, was informed that the plant would not take his milk until the off-flavor had been eliminated. The producer was firmly convinced that the dairy was looking for an excuse to drop him from its supply and could not believe any defect was present.

Investigation showed that the off-flavor present in the milk was due to the strong odor of wet sawdust used for bedding the herd, customarily spread just prior to the night's milking. The strong, turpentine-like odor passed through the bloodstream into the milk. The producer lost half a tank of milk, approximately 1,000 to 1,200 pounds, but after removing this milk and altering his procedure so that the sawdust was spread after milking, the plant again started receiving his shipments without further difficulty. Considering the producer's conviction that there was nothing wrong with his milk, I am sure that his loss would have been much greater than one day's production if circumstances had not permitted rapid correction of this situation. This plant's samples of producer milk have since been included in the flavor program carried on by the Future Farmers of America chapter of the high school.

A few examples of assistance given to producer-dealers are described below, particularly those from the areas now encompassed in the Southeastern Milk

Marketing Order. Within the scope of this order, producer-dealers must produce all their milk in order to avoid certain assessments. This provision added to the urgency of the calls received from producer-dealers because of customer complaints and the loss of customers because of off-flavors.

One cause of off-flavor that occurred during the spring was the high percentage of dandelions present in the pastures which caused a pronounced bitter flavor in the milk of the cows feeding in these pastures. These pastures should have been reseeded last year, but circumstances led to the attempted use of the pastures for another year, and this, combined with the severe winter kill of grasses in the area, resulted in a bumper crop of weeds.

This flavor trouble was very serious, since the producer-dealer informed me that the majority of his customers were complaining about the milk, and that 18 customers had threatened to quit unless the milk was satisfactory on the next delivery. In addition to this, 75 to 80 quarts were returned for credit by the customers. This situation was corrected by completely eliminating the pasturing of the herd and feeding chopped grass immediately after milking and at no other time. This included removing any grass remaining in the mangers after a feeding period of a couple of hours.

Another case involving a producer-dealer concerned a fruity off-flavor caused by the growth of psychrophilic bacteria. This situation had been called to the attention of the dealer by several customers who complained of an odd taste, particularly over weekends.

This operation involved the use of a refrigerated truck which was filled with cases of milk immediately after pasteurization, and which, after the plant cleanup was completed, was driven to another location where the unit was plugged into the electrical outlet. The difficulty arose because of the extended delay in placing the milk in the truck under refrigeration, which was caused by the time involved in processing an extra day's milk for the weekend. This was strictly a matter of poor handling and was easily corrected by maintaining proper temperature control of the milk at all times.

Another emergency call was received from a producer-dealer who suddenly discovered a strong odor emanating from the vat during pasteurization, which resulted in a sharp odor and taste in the finished product. The defect was readily identified as a chlorine off-flavor, but the cause was unusual. For more than 20 years one of the common household abrasive cleaners had been used on the stainless steel surface of the vat. Recently the dealer replenished his supply of the cleaner. In the meantime, however, chlorine bleach had been added to the product and the residue remaining after the abrasive had been rinsed from the vat was causing the strong odor and flavor of the milk. Here again a producer-dealer was confronted with a threatened loss of business. However, within a matter of hours after receiving the complaints, the producer-dealer brought samples of the milk to my home in the evening, which permitted rapid correction of the off-flavor before the situation became serious.

Another incident in which a chlorine defect was responsible for a loss of business occurred in a plant handling approximately 8,000 pounds of milk per day. This flavor defect persisted for several months and cost the dairy 10 to

12 customers over this period of time. The off-flavor was caused by the use of chlorine powder in making the sanitizing solution in the bottle washer. The powder was dissolved in warm water which, when cooled, caused the powder to precipitate out of solution. On cleaning out the solution tank, chlorine powder was found in the tank to a depth of approximately 2 inches. This meant that a saturated solution was present in the tank at all times, resulting in a final rinse of such strength that every bottle had an objectionable chlorine flavor.

Last autumn, a large dairy, processing 40 to 50 thousand pounds of milk per day, requested my assistance in correcting an off-flavor which was attributed to their producers. This milk was rancid and was responsible for the loss of 4 to 6 customers, some of whom had been customers for 30 years, and for numerous complaints from other customers. While shipments of milk from producers with cows in late stages of lactation was a contributing factor, the flavor defect developed mainly during the processing of the milk. This milk was preheated and homogenized before pasteurization. Because of an insufficient capacity of the preheater, the temperature of the milk fluctuated at levels at which, upon homogenization, the milk immediately became rancid. This meant that all the milk processed in this plant and offered to the consumers was, in varying degrees, rancid milk.

Steps were taken immediately to raise the preheating temperatures to safer limits, and plans were formulated to increase the capacity of the preheater and alter the layout of the milk flow so that the milk would be homogenized after pasteurization rather than before. These steps permanently eliminated the possibility of the reoccurence of the rancid off-flavor. Also combined with these steps was a thorough check of the temperature of the heating medium in the pasteurizing vats and the lowering of this temperature to the proper levels so as to avoid the development of cooked flavors in the finished product.

The contribution of the milk flavor program to the dairy industry of Massachusetts has been clearly demonstrated by the satisfaction of the milk dealers with the improvement in the flavor of their product. While it is difficult to graphically show concrete gains in consumer acceptance of milk due to the milk flavor program, the absence of or reduction in milk rejected by the consumer serves as an excellent indication of the beneficial effect of the program.

RECENT DEVELOPMENTS IN THE WISCONSIN QUALITY IMPROVEMENT PROGRAM

William J. Hansen
Wisconsin Department of Agriculture

We in Wisconsin feel that our quality improvement program is continuing fairly well on most of the projects undertaken to date. But, as so often happens, as one major problem is brought under control so that it no longer is regarded as a major problem, a new and more complex problem arises in its place. This is the type of problem we will discuss briefly today. Currently we are concerned with a continuing butter and cream quality improvement program, quality surveys of milk drying plants, continued direct microscopic investigations of milk supplies, milk flavor scoring and improvement, the problem of toxins in milk products resulting from staphylococcal sources, and several others.

Our most recent interest has been in the field of inhibitors in milk, with, of course, special interest placed on the problem of antibiotic adulteration and mastitic causes. These are the problems we would like to report on more fully.

The trade and technical literature carries much information about this problem. The Federal Food and Drug Administration has conducted several surveys of the amount and type of antibiotics found in consumer packages of fluid milk on several of our major metropolitan area markets. The results of these surveys are generally familiar to this group; a rather alarming picture in many respects, as antibiotics were present in many of the milks tested. Many other investigations have been made by colleges and universities, local health departments, and possibly by several State regulatory agencies. The results of these surveys tend somewhat to parallel those of the Federal Food and Drug Administration. Altogether, they pretty well point out the fact that the problem of adulteration of milk with antibiotic substances is nationwide. Here is a problem that needs a tremendous effort to develop a satisfactory program to bring it under control.

The problem has two important effects on the dairy industry. The first involves the consumer. She is never eager to buy a food product when she sees or hears the words "adulterated" or "contaminated" used in conjunction with it. The second is the serious effects on the fermented milk products industry of using milk containing antibiotics and other inhibitors. The effects on cultured buttermilk, cottage cheese, and other cheeses can be disastrous. Many of our Wisconsin cheese industry people feel that they have suffered losses because of antibiotic activity or effect in the cheese vat. Some have even reported being unable to process some vats of milk into a product. This may or may not have been caused by antibiotics. We must admit that antibiotics probably are blamed for many more "slow" or "dead" vats than they are responsible for. The old problems of bacteriophage and starter failures are now often overlooked and antibiotics blamed. The effects of low concentrations of antibiotics on the quality of the cheese made from milk containing them are hard to determine. There is little doubt that cheese made from such milk may very well not ripen into the high-quality product it might have if the antibiotic had not been present. The quality of aged cheese is probably influenced highly by this factor.

Many medical and public health officials are becoming more concernedwith the problem of antibiotics in fluid milk supplies. A rather significant percentage of our population is sensitive to pencillin. The people at the University of Wisconsin tell me cases of sensitivity have been traced to milk containing this antibiotic. People sensitive to pencillin may have the allergic effects of some type of dermatitis, or even possible shock can result. The people who know they are sensitive to pencillin would soon become reluctant to consume dairy products if they knew the possible level of antibiotic they could be buying. The consumer is often greatly impressed by newspaper or magazine articles of a "sensational" type which could do the dairy industry further harm, as they have in the past. Our major concern should be to give the consumer some reassurance that the dairy product she buys does not contain antibiotic substances.

During the past summer an article in one of our Wisconsin farm journals stated that during 1958, 75 tons of antibiotics were sold for use as udder infusion treatments for dairy cattle. At about 3.75 grams per tube, this was enough to treat over 18 million quarters. Wisconsin has a dairy cattle population of approximately 2-1/2 million cattle. We have only to visit the drugstores and feed mills to know that a considerable share of that 75 million tons was sold in Wisconsin. Many stores carry 10 or more different types and brands of antibiotics for udder infusion. How much is sold and given dairy cattle orally or intramuscularly we have no way of knowing. It must be a considerable amount.

We have no quarrel with antibiotics when properly used. They have been one of the major advances of our society in recent years. However, like all things, they can be used abusively and indiscriminately. Much has been written about the indiscriminate use of antibiotics and how we need an educational and regulatory program to control their use in dairy cattle. The veterinarians tell us they see very few cases of mastitis these days. Each producer seems to be buying his favorite antibiotic, and treating his problem cattle. Often the wrong drug is used against a particular strain of organisms, which tends to make that strain more resistant to all antibiotics. Cattle may be under-treated, and have resistant strains develop or have resistant strains become the dominate factor in the bacterial flora of the treated quarter. Many of these organisms have been found to be staphylococcal strains of hemolytic types capable of producing toxins that could cause food poisonings. There has been much interest of late in the relationship between mastitis caused by these organisms, treatment with antibiotics, and the changes in the average bacterial flora of many cattle.

The "seeding" from the cow's udder, and growth resulting from poor cooling both at the farm and at the plant during processing have resulted in the development of harmful toxins. At one time, the typical mastitic infection was caused by common strains of streptococcal organisms. The University of Wisconsin's study of mastitis has found that cases caused by the streptococci have been rare in herds they studied. The staphylococcal organisms are being associated with the majority of these cases being found. Many of these are chronic cases and have not been found to respond to any type of treatment satisfactorily. Many antibiotic-resistant strains of staphylococci have been isolated from these cases. Most of the farmers in this group have undertaken extensive herd replacement programs to rid their herds of chronic infections. We are sorry to report that not all of these attempts have been successful, but it seems to be the most satisfactory way of controlling this type of mastitis.

These, very generally, are the problems we are attempting to find effective means to combat. The first step in starting a sound program to eliminate antibiotics from milk being marketed is to start a campaign of testing and educational information. The first testing was of the Grade A producers under the supervision of the Wisconsin Department of Agriculture. The test used was the Difco penassay method, and all testing was done in the dairy and food control laboratory. The first tests resulted in several positive samples. These producers were contacted promptly by the supervising sanitarian and the dairy plant fieldman. Notices of test results were made available to the dairy plants, and literature was made available for distribution to all producers. The testing by the disk assay method is still being carried on; however, the percentage of positive samples is less than 1/2 percent. We feel that a program of regular testing, with good supervision and prompt field work, can bring the antibiotic adulteration problem under control. The educational work is being done through the cooperative efforts of various departments of the University, the State department of agriculture, the extension people, dairy plants, and veterinarians. This program will be continued and will need some coordinated direction to reach full effectiveness.

In view of the satisfactory results with this program, interest in investigating the manufacturing milk supplies followed. In the spring of 1959, the AMS section of the Wisconsin Department of Agriculture took into the field a test developed by people at the University of Wisconsin. This is the Triphenyltetrazolium test, commonly known as the TTC test. This test is the work of C. E. Neal and H. E. Clabert of the University of Wisconsin and is a biological test for inhibitation and is not able to identify any particular inhibiting substance.

This test has been found to be fairly sensitive to antibiotics, particularly pencillin, when using a culture of Streptococcus thermophilus. It is also possible to detect milk adulterated with sanitizing agents. The cultures of thermophilus are more sensitive than the commercial lactic starters and were used throughout testing done to date. Some duplicate sets were run to confirm the differences.

During the past spring and early summer, almost 1,000 TTC tests were run at various cheese manufacturing plants in Wisconsin. A total of 12.8 percent of the samples showed some inhibitation. Of these samples, 4.5 percent showed strong inhibitation. These producers were contacted either that day or early the following day by the department personnel and the resident dairy inspector. In most cases, antibiotics were found on the farm, either in the stable or milkhouse. In all cases, the producers denied using antibiotics recently--even in one case where a syringe was found still containing the antibiotic.

Our work with these producers led us to believe that most producers knew they were doing wrong in offering that milk for sale but did not understand why it was of such concern, since it could make the milk stand up better under the reduction test. This is also the reason many are probably using sanitizing agents as milkkeepers to beat the reduction test.

From the limited testing to date on manufacturing milk, we feel that we have a problem in need of considerable work to bring it well under control. Since the testing program was started, a series of meetings was held throughout the State to discuss the problem and introduce the test, and many plants are now conducting the test periodically. We feel that the industry should be conducting tests for inhibitors when they are experiencing manufacturing difficulties.

Results to date emphasize the scope of the problem and the conditions as we have found them. With a high percentage of manufacturing milk containing some inhibitor, expanding the testing program and direct contact of all positive producers will be continued. The various educational programs and materials will be utilized to the best practical application.

The interrelationship between the use of antibiotics and the changes in bacterial flora can be best met through a well-founded program of producer education. There is cause for alarm in the changes that have been exhibited in some herds.

We feel that, while we have not solved the problems discussed, we are taking steps to correct these situations in the best way we know to insure the quality of our Wisconsin dairy products.

HOW THE NORTH DAKOTA DAIRY INDUSTRY IS BENEFITTING FROM OUR WORK WITH THEM TO IMPROVE QUALITY

Roger Holkesvik
North Dakota Department of Agriculture and Labor

Under our State law and under our project with the Agricultural Marketing Service, one of our duties is to promote the dairy industry. To fulfill this obligation we had to delineate the boundries of operation within the available personnel, materials, and funds, and then proceed to inaugurate an effective program which was practical, efficient, and acceptable.

The phrase "promote the dairy industry" might be more vulgarly worded "to make the man making milk make more money." To my knowledge, there are only three ways for a sales industry to make more money: (1) Raise the selling price, (2) increase the sales volume, and (3) reduce the operating costs.

The first method is not generally applicable to the dairy industry because numerous competitors are waiting for any market for their product. Spontaneously, our program splits into two phases: Increase the sales volume and reduce operating costs. I will discuss these two phases separately, beginning with reducing marketing costs.

Dairying in North Dakota has played a different role on the average farm from what it has in many other areas of the nation. Our farms are large units, averaging over 800 acres. Generally, they are not diversified but rely heavily for the bulk of their income on a cash grain crop and the raising of livestock. The importance of milking to a farm has varied from year to year, depending on the crop and prices received for grain and livestock. A poor year from either of these sources stimulates dairying as the farmer attempts to relieve some of his income deficiency. Conversely, a good year will depress dairying, some farms even eliminating it.

This system, or lack of system, does not promote stability for agriculture, the community, or the individual; least of all for the dairy industry. This industry, as most industries, must depend upon a relatively stable (at least predictable) source of raw material. Without this stability, expansion becomes hazardous if not disastrous.

One of our objectives has been to incorporate dairying as an integral part of our average farm. We have cooperated with several government agencies and industry groups to promote "serious dairying." This has been a task of salesmanship--selling the fact that milking is a good economic shock absorber for a farm. It's not hard to sell a good product and I don't believe you could sell a farmer a better one. And it perpetuates itself! Persuade a few or even one good farmer in an area to emphasize dairying and he will sell his neighbors. As interest is incited, more capital is invested, which increases efficiency.

This increases profits, which whets the desire for more profits, and away we go!

Sometimes, however, our enthusiasm builds up a full head of steam before the track is laid. We have experienced this situation recently in North Dakota with manufacturing milk. About a year ago, a few dairy plants became interested in making cheddar cheese and drying skim milk. Their supply of raw milk was to be of manufacturing grade from farms equipped with bulk tanks. Two prime selling points of the tank salesmen were that there would be little or no effort in cleaning this equipment, as the route driver would wash the tank and, since there were no laws or regulations for manufacturing milk, there would be no supervision by Federal, State, or local regulatory officials. Immediately, Mr. Murphy, our Dairy Commissioner, drafted a set of regulations governing the installation and operation of all farm bulk milk producers, but not before many bulk tanks had been installed in barns, sheds, chicken coops, or any other available location. Some producers were virtually isolated from market, and most had no facilities for cleaning and sanitizing their equipment. One installation was made where there was not a cow on the farm.

The sales of these bulk tanks were usually handled by managers or sub-managers of the parent plant, so management had a dual interest, procuring milk and collecting tank sales commissions.

We felt that this was not "serious dairying" and was not in the interest of the dairy industry. Although a sizable investment was concerned, all the indications were that a poor-quality product would be produced. A furor arose when we began inspection of these farms and demanded that the physical and sanitary requirements be satisfied. Within a few months, however, all plants had reconsidered their position and began striving for acceptance as a Grade A operation. Now, all our differences have been resolved and the manufacturing milk program is proceeding with the assurance of a good-quality product.

Most of our dairy farms today have incorporated milking operations as an integral part of their farm, and are planning expansion and herd improvement. They are taking an active interest in dairying and expect to milk as long as they continue farming. This has resulted in a stable raw milk supply for our dairy plants and has enabled them to expand without challenging the hazards of an unpredictable supply of raw milk.

Other services we conduct are suggesting and sometimes requiring changes in buildings, equipment, and operating procedures. To promote quality and fairness, we routinely check grading and testing operations and results.

Although each fieldman is assigned a specific area, we use several or all of our men, including office forces, when we collect samples for laboratory analysis. This enables us to cover a large area at one time. We feel that covering an area rather than a specific site is an inherently good proposition in itself. It enables each fieldman to observe every dairy operation in the State. As each man is eager to improve his own area, he will actively encourage the incorporation of any beneficial process or procedure into his area which he may have observed in other areas. Finally, one car may transport as many as 4 men to the selected sampling area, which decreases the traveling expense.

The other phase of our program concerns sales promotion. We realize that, to sell a product, one of several conditions is required for a successful business: (1) The product is unique and desirable, (2) the industry competes by selling the product cheaper than its competitors, (3) the industry overwhelms the competition with advertising, contests, prizes, and premiums, (4) the industry corners a market through popularity because of community service, employee personality, and charity (usually applicable only to a local market), (5) the industry captures a market by building trade barriers, or (6) the industry competes by offering an attractive, high-quality product.

The first three conditions can be dismissed immediately from our program. Uniqueness is not common in the dairy industry; pricing below competition is impractical because of the low margin of profit with which the dairy industry operates; and overwhelming the opposition is a privilege of the larger plants with extra working capital who have their own quality, sales, and training programs and do not need our help as much as the smaller operations. This would not exclude our participating in any program designed to promote dairying in general or deter us from giving service if requested.

The fourth condition involving popularity is a will-o'-the-wisp, important to the small plant which depends on a local market. This is predominantly a management problem and our aid is limited to suggestions, criticisms, and sometimes playing arbiter or consultant.

The fifth condition, referring to trade barriers, is genuinely disgusting, not only in the dairy field but in all sales fields. Any effort here would be a negative one.

The last condition, stressing quality and attractiveness, is where we have placed most of our emphasis in our program. Within the last 3 years the following improvements have been made on our farms producing grade A milk:

New milk houses	32 percent
Remodeled milk houses	57 percent
Improved ventilation	44 percent
New hot water facilities	56 percent
New milk coolers	53 percent
Increased lighting	61 percent
New barns	11 percent
Remodeled barns	85 percent
New water systems	28 percent

In the last 3 years, the following improvements have been made in plants processing grade A milk:

Repaired buildings	56 percent
New milk processing rooms	10 percent
New receiving rooms	68 percent
Remodeled water supply	38 percent

Since inauguration of our routine testing program for bacteria, the pasteurized milk samples which satisfied grade A standards for bacterial counts and coliform counts have risen from 46 percent in 1953, to 84 percent in 1958, and to 90 percent in the first half of 1959. Raw milk for pasteurization which qualified for grade A by bacterial count standards has risen from 72 percent in 1958, to 77 percent for the first half of 1959 (only years for which figures were available).

Every producer's milk is tested for brucellosis every 6 months or oftener by the ring test. Samples are picked by our department and submitted to the State-Federal Brucellosis Laboratory for analysis. They follow up all positive and suspicious results with additional ring tests and blood tests.

In encouraging attractive products, we have made many suggestions and recommendations, often using the latest material distributed by the Agricultural Marketing Service.

Recently, I compared the volumes of milk processed and butter churned by each dairy plant in 1956 to the year 1959. I grouped the plants into 5 categories as follows:

1. Plants which have been extremely interested and cooperative in our program.
2. Plants which have been cooperative but have not shown the enthusiasm shown by those in category 1.
3. Plants which may be interested but have not shown too much effort in cooperating.
4. Plants which have been disinterested and uncooperative with our program.
5. Plants which have their own programs promoting quality, sales, and service where we have not expended much effort.

The results were as follows:

Category of plant	Change in volume of milk processed in 1959 compared to 1956	Change in volume of butter churned in 1959 compared to 1956
	Percent	Percent
1........	+40	+25
2........	+22	+16
3........	+12	-2
4........	+10	-8
5........	+15	+3

Although we have made considerable progress in our quality program, we don't feel we are working ourselves out of a job. We have many problems left to resolve, objectives to pursue, some still unknown, but we'll keep on trying. We must share any success we have had with the Agricultural Marketing Service. Without their aid and guidance, our program would never have been started. We hope that we will be able to finish together what we have started together.

RESULTS BEING OBTAINED IN IMPROVING DAIRY PLANT EFFICIENCY IN INDIANA

Hugh Moore
Purdue University

Looking over past National Marketing Service Workshop programs, I found that for many, the dairy marketing program theme dealt with what could be done to improve operational efficiency in handling and processing milk. The papers presented at those programs have handled the subject well. Thus, I would like to place my major emphasis on some tools and techniques used in improving dairy plant efficiency in our service program at Purdue. Many of these techniques are new. They have given us a lot of encouragement as to what their potential usefulness might be.

In the early 1950's, Purdue personnel surveyed the Indiana dairy industry to determine which problem areas they felt needed the greatest work emphasis. The area most often emphasized was plant operational efficiency, particularly with labor. For the following few years, major work concentration was placed on problems of work simplification. Some of the early work done was on reducing plant receiving room costs. Studies were made to determine what was a normative performance for various intake volumes. Changes were recommended which were designed to reduce the labor resources employed in receiving the milk. It was not unusual to reduce the number of work hours by half after making rather inexpensive changes in the milk intake facilities. Studies in work simplification also were done with bottling operations, cold storage rooms, and loadout operations.

Later, it became apparent that Purdue could make a major contribution if it could supply dairy plant management with tools which would assist them in making managerial decisions. During the last few years, the emphasis of our dairy plant service work has shifted from work simplification to the broad area of aiding management in the decision making process. We have, of course, continued our other service work, such as work with Federal orders and bargaining co-ops.

Modern management is a science. To make decisions for large, complex organizations requires that management quantify or measure and evaluate plant phenomena as quickly and accurately as possible. To help them in this work, Purdue has gone to the electric brain, in our case Datatron.

The "electric brain" such as our Datatron is not really a brain but a machine--nothing more. It is highly complicated, of course, but not mystical. It does exactly what man dictates to it, just as any other machine. Its virtue lies in the fact that it can handle complicated problems more accurately and much more quickly in most cases than can man. But man must show the machine how to do the problems.

Basically, the electric brain can perform two tasks. It can mechanize and speed up routine tasks such as accounting, and it can solve management problems that can be put in mathematical terms. We have primarily concerned ourselves with the latter task.

An example of an analytical technique easily adapted to the electric brain is linear programming. Linear programming can be used effectively to solve many types of plant problems. Among them are (1) plant layout, (2) work schedules, (3) selection of machines and processes to use, (4) delivery route scheduling, (5) incentive wage and route commissions, (6) inventory problems, (7) product line selection, and (8) pricing and promotional policies. This list could be expanded upon, but it is sufficient to show that Datatron's potential usefulness to management is tremendous.

Let me illustrate to you the use of linear programming in helping to decide what products a fluid milk plant should produce. 1/ The products which a plant produces are influenced by many things. For example, in most plants it is not easy to say whether a plant should go 100 percent paper or not. Let us look at how this might be solved by linear programming.

Problem I

First, let us take a very simple problem: Suppose:

1. We have these fixed items:

(a) coldroom space	10,000 square inches
(b) machine capacity	480 minutes running time

	Coldroom space	Machine time
2. (a) quart	30 square inches	2 minutes
(b) half gallon	50 square inches	5 minutes

3. Our selling prices less all costs except a charge for coldroom space and machine time are:

(a) quart	9 cents
(b) half gallon	17 cents

4. We know that we can sell 1,000 quart equivalents of the two together at these prices. Either can substitute for the other.

5. We want to know which of these to produce to get the greatest return, considering our fixed resources in coldroom space and machine time.

You look at this and say, "Well, quarts net me 9 cents per quart equivalent and half gallons only 8½ cents per quart equivalent, so I will push quarts. The market will take 1,000 quart equivalents; have I machine time enough to produce this many? No, a check on this shows that I can only go up to 240 quarts. This looks like a bottleneck. Would I do better on half gallons? No, I can produce only 96 half gallons. This would return me only $16.32; whereas 240 quarts would return me $21.60. So I had better stick to quarts. I know that 240 quarts are the most I can produce but, maybe I cannot produce even this many. Have I coldroom space enough to handle them? A quick check shows that I have enough to handle 333 quarts; so I am all right here. Thus, the answer is 240 quarts and no half gallons."

1/ The following illustrations were largely adapted from a paper entitled, "Univac Says..Thumps Up-A New Way to Pick a Profitable Line of Products," presented by Professor Charles E. French, Purdue University, before the 49th annual convention of the Milk Industry Foundation.

You went at this much as the electric brain would and it wasn't too difficult. You didn't have many products, machines, or selling prices to deal with. It's when you multiply each of these several times that the electric brain comes into its own.

Problem II

Now, let's take a little harder one and look at Datatron's method a little more closely.

Suppose:

1. We have these fixed items:

(a)	coldroom space	52,000 square inches
(b)	quart machine time	360 minutes
(c)	half gallon machine time	360 minutes

2. It takes this much of each to produce one unit of these products:

	Coldroom space	Machine time	Machine time
(a) quart	8 square inches	.04 minute	none
(b) half gallon	5 square inches	none	.10 minute

3. Our selling prices less all costs except a charge for the coldroom space and machine time are:

(a) quart	25 cents
(b) half gallon	40 cents

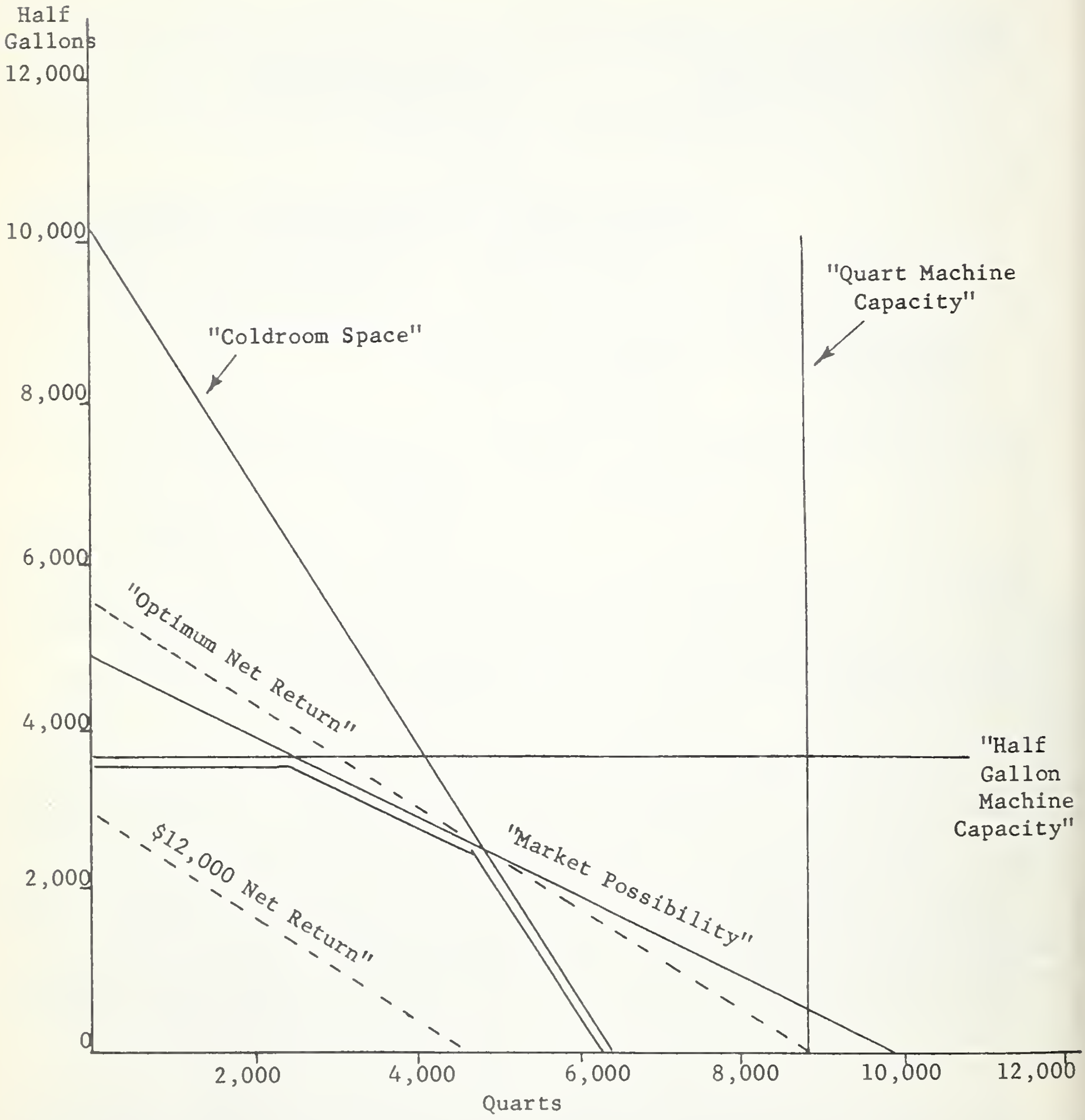
4. We can sell 10,000 quart equivalents of the two together at these prices. Either can substitute for the other.

5. We want to know how much of each to produce to get the greatest return.

This is a little hard to see, so let us draw a picture of it. (See chart 1.) We know that we have a capacity for only 3,600 half gallons on the half gallon machine, so let's draw a line to show that we must not produce more than 3,600 half gallons. This line we label "half-gallon machine capacity." The quart machine limits us to 9,000 quarts, so we draw that one in as the "quart machine capacity" line. Now we have a second factor--coldroom space. We have space for 10,400 half gallons or 6,500 quarts. If we draw a line between these points, we have all possible combinations which the coldroom can handle. One such combination would be 4,000 half gallons and 4,000 quarts. We call this the "coldroom space" line. Now we know that the market will take either 10,000 quarts or 5,000 half gallons. If we draw a line connecting these, it will show all possible combinations of the two which we could produce and still not go over the 10,000-quart equivalent limit of the market. For example, one such combination would be 4,000 half gallons and 2,000 quarts. We call this the "market possibility" line. Now, you can see that we have a picture of what we can produce--any combination of quarts and half gallons below the heavy black line formed by these intersecting lines. The question is, which particular one? It's rather simple to find that one. All we need are the prices.

What are the relationships between our prices? All we need to determine this is to find how many of each we must sell to get a logical net return, say $1,200. We can get that with 4,800 quarts or 3,000 half gallons. If we draw a

Chart 1.--Illustration of Linear Programming Solution for Problem 2



line between these two points we have all the possible combinations of these products which will give us this return of $1,200. This line is labeled "$1,200 Net Return." Now, if we will draw a line parallel to this one at the highest point possible and yet touching the heavy line marking out our production possibilities, we can get our answer. Such a line, labeled "optimum net return," should show that we should produce 2,550 half gallons and 4,900 quarts, for a net return of $2,245. This is the most that we can possibly get under our conditions. It is the one best answer.

This graphic technique is a useful one for simple problems involving only two products. But when you get more than two, you have trouble drawing pictures of them and need another system. This is where Datatron comes in. It can easily handle 50 to 100 products and 50 or more restricting factors.

Professor Charles E. French and James Snyder applied linear programming techniques to help Indiana plant operators pick their best line of products. I would like to show you the results obtained from one of these plants. This was a good plant, about 75,000 pounds per day volume, progressive, excellent accounts, and not a plant where you would expect to make a large saving. Yet Datatron showed that improvements could be made even under these conditions.

Certain types of specialized labor, machine capacities, coldroom space, fat content of the milk, market potentials, and operating capital were the main items which were considered as possible limitations. The Datatron was allowed to select among any products in the present line of products. The total problem as given to Datatron involved 26 mathematical equations with 20 unknown factors in each equation.

Labor was allocated to the products by time study, space requirements were measured, actual machine capacities were determined, product formulas were used, a 15 percent increase in present sales was allowed on each product, and regular accounts were used to determine operating capital needs and unit selling prices. As you can see, a lot of detailed work must go into the preparation of a linear programming problem if useful results are to be obtained.

Thus, two types of answers were secured. First the plant operators obtained the line of products which would maximize returns to the plant. With this they had some indication of the loss that would occur by switching products.

Datatron also told how much of each of the resources to use and how much of each should be left unused. In this plant the factors that actually limited production turned out to be glass machine time and milk supply. For example, an additional unit of glass machine time would have been worth 31 cents to this plant. Another pound of fat would have been worth 18 cents over the present pay price, and skim would have yielded 3.3 cents over present cost.

Some of our general findings were:

1. Within a $50 range in daily net returns, considerable flexibility existed in choice of a line of products. Within reason it made sense to "meet competition" on certain new products entering the market.

2. There was some evidence that, in the short run, firms can afford to spend sizable amounts on increasing certain product sales. Marginal values for certain products were sizable.

3. There was evidence that labor-machine balance and this type of thing were more important than line of product. For example, labor shortages suggested high priority for labor efficiency studies in specialty product processing and coldroom product handling. The cottage cheese operation of the plant studied was remodeled to eliminate a processing labor bottleneck.

4. In all cases, restrictions of resource inputs reduced net returns out of proportion to costs. For example, this plant could have realized $2,790 per additional square foot of coldroom capacity, 59 percent return on borrowed working capital, and $7.80 per additional man-hour of plant labor.

5. Excess capacity costs dearly. For example, a 20 percent reduction in volume handled by this plant gave a marginal value for an additional hundredweight of milk, 34 percent above the actual buying price.

Another useful adaptation of the electric brain to dairy plant problems is in plant simulation procedure. Here a plant operation is set up on paper. The plant operations as well as the restrictions are put into the computer, based upon management policy and limitations of the plant. By operating the computer an hour or less, it is possible to simulate the operation of a dairy plant for several years. Thus bottlenecks can be identified and adjusted without the plant ever being in actual operation. This program is still in the development stage, but will be operational soon.

Electric brains are only one tool for aiding plants to increase their operational efficiency. Other service programs require additional tools and techniques. I would like to mention a couple.

Knowing what dairy plant records to keep and in what form to keep them had always been a problem for management. Too many records are expensive and time-consuming to maintain. Likewise, too few records or records of the wrong kind can impair management's ability to make intelligent decisions. We are also developing a reporting system which will make records useful for making decisions.

A program to help plants to pick their product line is being developed. This program is partially based on some of our linear programming work with plants. We have some pretty good ideas now of what a plant should look for when selecting products to maximize returns.

In summary, to a large measure dairy plant operational efficiency requires intelligent managerial decisions. However, the growing complexity of our dairy plant operations and marketing conditions is making the management function more and more difficult. This has called for new analytical tools and techniques to provide more sophisticated answers than we have had before. To provide these answers has been our goal at Purdue.

ASSISTING DAIRY COOPERATIVES IN REDUCING OPERATING COSTS

Stanley F. Krause
Farmer Cooperative Service, U. S. Department of Agriculture

Farmer Cooperative Service places primary emphasis in its work program on helping farmer marketing organizations operate efficiently. Our topic suggests research and assistance directly concerning operating efficiency. I would not be satisfied to limit this discussion to work directly affecting operating efficiency, for other fields of analysis may finally have just as much effect on operating costs.

FCS uses three approaches in its work. Research is the foundation, and most resources are devoted to this. Our legislative authorization also directs us to conduct service activities of assistance to farmers in connection with cooperatives. Educational work includes preparation of our monthly magazine, News For Farmer Cooperatives, replies to requests for information, and speaking before groups of farmers, annual meetings of cooperatives, and regional and national meetings such as this.

How Each Approach Assists

Publication of research findings is a mass-production method of assisting business concerns with economic problems. Our Dairy Branch conducted 5 major service studies last year, plus 7 consultations in the field. Ten associations in 5 States were served by the formal studies, and 36 additional associations or producer groups were represented in the 7 consultations.

The educational approach is another mass-production method of assistance. We also handle many correspondence inquiries for cost and other research information.

How Service Work is Performed

Most of our service studies originate with a formal request from the board of directors of the cooperative concerned. We try to work closely with State colleges in all service activities. We also consult with college staffs, State departments of agriculture, and Banks for Cooperatives in the field. In some cases other agencies take primary leadership and consult with FCS; and at other times we take leadership and consult with college, State, and other agencies.

Three types of studies undertaken by FCS are:

1. Operating analyses.
2. Accounting.
3. Assistance in the organization and management fields, including merger studies.

The heart of our procedures in review of operating problems is analysis of operating expenses of a cooperative. Many comparative data are available for expense comparisons, and there are excellent studies of manufacturing costs, bottling costs, receiving, and other operations.

In this work--once the areas needing special attention have been isolated by expense comparisons and observation--it is necessary to look for ways to improve. Management itself generally does the best job of this. We have often been able to make specific suggestions ourselves.

Requests for assistance in studying merger proposals have been numerous for several years.

Three general areas may be included in merger studies: (1) Economic considerations, (2) legal problems and procedures, and (3) financial problems and procedures.

In our economic appraisal, we start by reviewing the marketing conditions in the area, and the position of each cooperative in the market. Next, we analyze the present operations of the cooperative. In one recent study concerning several cooperatives, the following headings appeared under each association name:

1. Supply of producer milk (quantity, trends, and supply area).
2. Facilities.
3. Staff.
4. Operations (what processing done and where).
5. Marketing program.
6. Handling costs and returns (operating and marketing efficiency).
7. Financial conditions.

After a detailed look at the operation of each cooperative, the next step is to consider alternative changes.

Legal procedures in combining cooperatives can be quite troublesome. Therefore, we recommend that the cooperatives seek the assistance of a counsel with extensive knowledge of cooperatives and cooperative law.

Another major aspect of merger or consolidation is working out its financial basis. Much energy has been wasted and many dollars used making complicated appraisals. If merger is justified, the financial benefits to be derived from operations far outweigh values involved in assets.

What Results Have Been Obtained

One study several years ago concerned operating costs and marketing returns of two cooperatives in the Midwest. The result of merger in this case was a healthy marketing operation. The business contributed by the weaker association was a real asset to the merged association.

Another analysis led to immediate savings in 2 or 3 plants. One cooperative took prompt steps to reduce its electrical rates when comparative data were available. Another reduced labor in at least two departments when shown its costs were out of line.

Areas Needing Attention

Much remains to be done in assisting dairy concerns in reducing operating costs. Some problems needing specific attention are the same, but others are different from those of 20 or 30 years ago. The industry has not stood still, therefore, the needed approach in assisting management very likely is somewhat different.

Assistance in business organization problems and management techniques will continue to be a fruitful area for outside assistance to large-scale diversified marketing concerns. As examples of organization and management problems, we may learn to work more with problems of financing, with lines of management authority, and with problems of communication. We should emphasize the need for planning in business management and provide specific assistance in planning procedures.

We all know that dairy concerns are becoming larger and more diversified. The top manager of these concerns cannot manage by intuition; he needs data to make comparisons. He must obtain tools that will summarize the results of a month's or year's operation that he could not observe in detail hour by hour.

We might assist by adopting and selling the attitude that formal, organized procedures in labor negotiations are the dignified, businesslike method. Then, we might assist by outlining types of factual and pertinent data that may be employed in labor negotiation.

We need the wisdom and leadership to show other individuals and groups that they are best served by growing, healthy marketing organizations--and not by two or more sick and failing ones.

Business managers will learn to isolate trouble spots themselves by their methods of continuing internal analysis. The job of public agencies will become increasingly to assist in developing improvements in organization, financing, analysis of economic and marketing conditions, communications methods, and membership relations.

SOME CURRENT PROBLEMS IN MARKETING FLUID MILK

C. B. Cooper
Kentucky Department of Agriculture

It must be made clear that fluid milk marketing problems have been complex, are complex, and are going to get more involved in the decade ahead.

In the past 2 years, our department has become involved in giving service and advice, and in testifying at Federal milk market hearings. Rightly or wrongly, a State department of agriculture cannot ignore Federal order programs and problems. It is our opinion that a dairy farmer has the right to ask our department marketing specialists for advice, guidance, and help.

One of the major problems is that Federal orders are extremely complicated, so that some better device to educate farmers to understand them appears to be the order of the day.

Certainly our universities and cooperative organizations have an obligation to the masses of dairy farmers to improve the understanding of Federal orders. I would like to suggest that every avenue of imagination be used to make it possible for the practical dairy farmer to understand at least the fundamentals of Federal order programs as they relate to marketing fluid milk.

Another item relating to Federal orders that is becoming evident is the fact that their influence is being greatly felt in having market areas extended. In our State during the last 2 years, Federal orders around Paducah, Nashville, Evansville, Louisville, Cincinnati, Huntington, W. Va., and Bristol, Va., have all asked for and are in the process of receiving additional counties as part of the marketing area. This movement alone makes it necessary that all of us who are interested in milk marketing problems must realize the impact and complications that this particular growth in Federal orders will create.

A current market milk problem deals with the fast-growing farm bulk tank pickup program. In some markets, 75 percent of the milk is now transported to the market in bulk tanks. This program has created special emphasis on the importance of the tank truck driver who services the producer. With the installation of the farm bulk tank, we have placed in the hands of the tank truck driver the responsibility of grading the milk, weighing the milk, and taking the sample for the Babcock test. This places a tremendous responsibility on the truck driver. It is our opinion that here is an area of milk marketing that needs all of our attention, in a greater quantity than we have given it up to now.

I ask this question: What is or what should be the responsibility of a State department of agriculture in the problems of farm milk pickup?

Many States have a license for the tank truck driver pickup. In many States this license and permit is merely a formal function of filling out an application. Very little, if any, follow-through is given as to the absolute requirements that would be needed of a proper tank truck driver. It may be our function to act as a liaison between the various agencies in the State whose responsibility it might be to act as co-ordinator, educator, and supervisor of this key person that we call the truck driver.

This help could be manifested in several ways: By periodic meetings of the haulers, some type of association giving the milk hauler the status of a recognized person in the industry, and a continued check on his activities while doing his important work of milk pickup.

It must be recalled that the expense of getting milk to market today is a sizable one from the standpoint of the farmer. In general, when a tank program has gone into a market, the farmers increased their production an average of 30 percent. This means that a farmer is dealing with a sizable volume of cash when he installs a bulk tank. Any carelessness or inaccuracy can involve a sizable amount of cash. We all know that today the borderline between a successful and an unsuccessful dairy farm operation is mighty thin. This fact points out the importance to the farmer of being absolutely sure that accuracy to the last detail is followed when it comes to weighing and testing his milk. An uninformed, sloppy, inaccurate milk tank driver can literally ruin the operation of a dairy farm.

I hope I have not overemphasized the importance that I place on the bulk tank driver. To me it's a real problem. Those of us who are responsible to farmers have an obligation, whether we assume it or not, to be sure that the bulk tank program is properly handled.

The third problem that I would like to raise briefly has to do with the overall problem of interstate milk shipments. There are many basic problems, as we all know, that develop out of interstate milk shipments, including the quality problem and the pricing problem. Because milk shipments can be made from a farm to distant areas across the country, it is necessary for all of us to view this problem as a common one. Federal order pricing, State milk control laws, to say nothing of quality requirements, present a maze of confusion and misunderstanding that can work to the detriment of all of us if these problems are not faced and approached with a practical, sensible attitude.

Many attempts are being made to handle these problems. We as department people should spend as much time and effort as we deem necessary to bring orderliness and reason to the tremendous job of properly marketing farmers' milk. It is important that a Kentucky problem is an Indiana problem, and an Illinois problem is a Florida problem. Again, whether we approve of it or disapprove of it, State barriers are passing into the background, and we must think of our marketing problems as areawide rather than statewide. This, of course, disturbs all of us. However, the only time when a problem becomes unmanageable is when we ignore it or refuse to admit that it exists.

PRICING MILK UNDER FEDERAL ORDERS

Donovan D. MacPherson
Agricultural Marketing Service
U. S. Department of Agriculture

The subject of pricing milk under Federal orders is extremely complex and could be discussed from several points of view. I will consider only two: First, and rather briefly, the technicalities of pricing; second, and in somewhat more detail, factors which determine levels of prices.

Both of these points of view bear heavily upon past and present problems of the Federal milk order program. The program follows the trend of the times. As fluid milk marketing changes, problems change. Current problems have in some cases been developing over time, but in some cases they are new. Producers in the Chicago market are talking of a milk strike to force higher prices. Superpools and premiums have resulted in fluid prices that are higher than order prices, raising the question of why these higher prices should not be accepted as order prices. Historical relationships between fluid milk and manufacturing milk are changing. Prices attained under economic formulas are tending to move out of normal relationships with those attained under manufacturing milk formulas. Problems exist in maintaining alinement of prices attained under one set of economic formulas with those attained under another set of economic formulas. Solution of these problems, as with past problems, will be made within the framework of the authorization given by Congress.

Congress determined that milk was sufficiently related to public welfare that it should be regulated; otherwise, its production and availability to consumers would be jeopardized by disorderly marketing conditions. At the urgent request of the industry, particularly cooperatives, Congress provided legal machinery through which more orderly marketing conditions for milk might be established. Congress did not give the Secretary of Agriculture a blank check for dealing with disorderly marketing conditions in a milk market. What Congress did do was to spell out quite specifically when and how the Secretary of Agriculture should act.

The responsibilities of the Secretary of Agriculture could be listed as follows:

1. When the Secretary finds out that a proposed order might tend to effectuate the purposes of the Act, he shall hold a public hearing.

2. On the basis of the evidence received at that hearing, and on no other basis, he must issue a decision as to justification for an order.

3. If he decides that an order is justified, he must set forth the terms and provisions of such an order, all of which again must be based on evidence received at the public hearing and authorized by the Agricultural Marketing Agreement Act of 1937.

4. He must determine by referendum or otherwise if the requisite number of producers specified in the Act favor the issuance of the order.

5. He must set up an agency to administer the terms of the order.

6. He must hold public hearings from time to time on proposals to amend such orders and issue such amendments as the evidence at the public hearings justifies.

7. He must terminate the order at the request of the requisite number of producers specified in the Act.

8. He must terminate or suspend the order, or any provision thereof, if he finds that it does not tend to effectuate the purposes of the Act.

9. He must provide for judicial review of any decision by a judicial officer in an adjudicatory proceeding.

The terms and provisions which the Secretary may utilize for establishing more orderly marketing conditions are specified. These may be listed as follows:

1. Definition of the marketing area for which the handling of milk will be regulated.

2. Classification of milk in accordance with its use.

3. Fixing of a minimum price for each use classification.

4. Provision for a marketwide pool or an individual handler pool.

5. Establishment of an agency to administer the order.

The Act contains many other provisions, one of which is important to this discussion: No provision of a Federal milk order may exclude from the market milk produced in any area of the United States.

Congress further specified the standards to be used in establishing prices: Prices shall be reasonable in view of the price of feed, the availability of feed, and other economic conditions which affect the supply and demand for milk and its products in the marketing area; shall insure a sufficient quantity of pure and wholesome milk, and shall be in the public interest. This language is interpreted to mean that the prices established will change as supply-demand conditions of the market change. The Federal milk order program is basically one of administered supply-demand pricing.

A mere listing of the responsibilities, terms, and provisions clearly indicates that the responsibilities and authority of the Secretary are indeed circumscribed. Many of the suggestions and criticisms made about the operation of the Federal milk orders should more properly be requests for changes in the Act rather than in the administration of the Act.

A large percentage of the suggestions and criticisms of Federal milk orders relate to marketing area and price. This is natural, since marketing area and price are matters of direct concern to all participants in a market. It may be somewhat difficult to arrive at a definite opinion when evaluating technicalities of an order, but it is very easy when evaluating a sales area or the amount of a milk check.

The milk industry has changed a lot since the first Federal orders became effective. At that time, most fluid milk markets were, to varying degrees, isolated, and therefore were insulated against occurrences in other fluid milk markets. Fluid milk sales areas are limited to the area in which milk in consumer packages can be transported economically and in good quality. Milksheds are limited to the area from which milk in bulk can be transported economically and in good quality.

Transportation facilities have improved rapidly in recent years, both in refrigerated equipment and better highways. Bulk tanks are replacing cans. Quality control has improved the keeping characteristics of milk. These improvements have changed the concepts of marketing areas and milksheds. Boundaries for economic movement of milk have been extended. The isolation of the individual market has to a large extent disappeared; sales areas and milksheds have so intermingled that separate areas are in many cases indistinguishable.

The Federal milk order program when establishing prices is affected by these changes. Prices in neighboring markets must be alined so as to direct milk to each market according to its needs and to provide comparable prices to distributors and to producers who have common sales territories. These neighboring markets are not necessarily contiguous: In some instances, bulk shipments of milk move over 1,000 miles; packaged fluid milk moves up to 500 miles. Bulk milk is shipped from the Ozark market to 5 other Federal order markets, packaged milk is shipped from Chicago to several other Federal order markets.

I believe that the flexibility of the Federal order program in adjusting to changing market conditions is the principal reason for its wide acceptance and expansion. I also believe that many of the State programs have disappeared or are in trouble because of their inflexibility--their inability or unwillingness to adjust to the changing market.

The formula system of pricing milk in the Federal order program helps to maintain price alinement among the markets. These formulas tend to move basic prices in each market by about the same amounts. At the same time, pricing factors such as supply-demand adjustments tend to permit prices to reflect conditions peculiar to the individual market. This permits the available milk supply to be distributed according to each market's needs.

Two main types of formulas are used for pricing Class I milk. In all areas except the Northeast, formulas are based upon the prices of milk used for manufacturing. The Chicago market is, in a sense, the basing point for these prices because Chicago is in the heart of the dairy products manufacturing area, and a large percentage of such manufacturing is within the Chicago milkshed.

Class I--fluid use--prices at Chicago are established at levels that are above manufacturing prices by a relatively small amount. At higher levels, it is probable that a very large amount of milk would be shifted to the Chicago market. Over 60 percent of the milk produced in Wisconsin--and Wisconsin accounts for about 12 percent of the total national production--is Grade B, or manufacturing grade, milk, and is produced mostly on commercial dairy farms that by State law are required to have milk houses. If the Chicago Class I price were to be set substantially above manufacturing prices, literally millions of pounds of milk a day would move to the Chicago market; the result would be a blend price fully as low as or lower than the present blend. (The question could be raised, "Why not use a quota system?" But quota systems would not be legal under the authorization given by Congress.) Class I prices in other markets using manufacturing milk formulas are at about the level of Chicago Class I prices plus transportation. If these prices were higher, Chicago milk would be knocking at their doors.

Economic formulas are used in the Northeast markets. The same type of indexes are used in all of these markets.

Consequently, all prices in Federal milk order markets have some tendency to move together. A change in the price of manufacturing milk will change the price of milk in all markets using such milk as a base. A change in an economic index will change the price of milk in all markets using economic formulas.

In fact, prices are even more closely alined than would be indicated by the common bases. Supply-demand factors are in some cases on an area basis. In the Chicago area, sales-supply data for the Chicago market are used, and prices in nearby markets are tied directly to the Chicago price. All five of the New England markets are tied directly to the sales-supply data for the Boston market. Class I prices for several Ohio markets are tied directly to the Cleveland price. The sales-supply data for the north Texas market sets the prices for several Texas markets.

As individual marketing areas and milksheds become indistinguishable, there are more arguments advanced for regionwide and even nationwide pricing.

The Federal milk order program has developed with the philosophy of changing with market changes. There appears to be no reason to assume that the market changes in the next few years will not be as great as, or greater than, in the past few years. Consequently, the Federal milk order program will change, too. Regional pricing and closer alinement of prices between regions will be just another step in the planned management of fluid milk markets for the maximum benefit to our national well-being. Price, because of its impersonal nature, appears to be the best method for accomplishing these benefits.

The planned management of fluid milk markets, in the future as in the past, depends upon intelligent information. The only evidence that may be used is that which is presented in open hearing. I believe that you, as State representatives, have an obligation to present evidence at these hearings. Information that you can provide is needed to guide future regulation.

WHAT STATE DIVISIONS OF MARKETS CAN DO TO IMPROVE THE ADMINISTRATION OF STATE MILK CONTROL LAWS

Robert F. Hutcheson
Virginia Department of Agriculture and Immigration

Milk control laws are in effect in about one-third of the States. These include most of the States on the Eastern Seaboard, plus California and Montana. Most of the milk control laws, both Federal and State, were initiated during the 1930's, when milk delivery was literally in the horse and buggy stage. In some cases, control statutes and regulations that were tailored to the situation of 25 years ago are still in effect. Newer laws and regulations usually allow somewhat more flexibility in marketing practices than those more than 10 years old.

Most of the States provide for minimum prices, and a lesser number of States have resale pricing.

During the past 10 years, there has been constant pressure by various groups to remove State control regulations, and in a few places this has occurred. Recently there have been increased efforts in other areas to effect resale price control. Federal market orders have grown and consolidated rapidly during the last 10 years while the number of State orders has declined slightly.

Where interstate commerce in bottled milk occurs, the State controls are not generally effective, and efforts have been made to formulate Federal orders as was done in southwest Virginia by the Tri-State Milk Producers' Association, and in northern Virginia by the Maryland and Virginia Milk Producers' Association.

State milk control laws are the basis for regulation of one or more of the following: (1) Producer prices, (2) classification according to usage, (3) sales quotas, (4) resale prices, and (5) fair trade practices.

Powers and requirements of control agencies may include: (1) Licensing handlers and/or producers, (2) requiring handlers to be bonded, (3) requiring records and periodic reports, (4) investigation powers, and (5) auditing powers.

Producer prices are more stable and are usually higher in areas under State control laws. When producer groups are not well organized, equipped, and managed, the State control laws afford considerable protection in pricing and classification. Although State controls are useful to most producer groups, they are extremely useful to local producers when there is little movement of milk out of the State and where producer groups are not organized and equipped to move milk to other than regular handlers.

Problem areas in the operation of State milk control laws include:

1. Interstate movement of raw and processed milk.
2. Sales to military and other installations.
3. Restriction of new producers and other source milk and fixed quotas of established producers.
4. Required delivery to one handler.
5. Restriction of new distributors and of established distributors to new areas. Restriction of innovations or new methods in marketing.
6. Adapting statewide regulations to local conditions.
7. Adaptation of regulations to changes in marketing conditions such as improved storability, newer containers, longer supply routes, growth and overlapping of distribution areas, and removal of "health barriers" that would increase marketing efficiency.

The Virginia Division of Markets has provided some assistance to the State control agency by providing marketing information, by analyzing pricing and classification systems, and by making suggestions in adjusting market regulations.

To provide marketing information, the following were drawn up:

1. Flow chart of milk from farm to market.
2. Grade A milk marketing flow diagram.
3. Processed milk sales and per capita consumption.
4. Trends in container sizes and store versus home delivery.
5. Seasonal patterns in sales.

This information was collected and summarized from milk commission audit records and from survey questionnaires.

The analysis work was done to:

1. Show the blend price of milk under several classification systems.
2. Show the comparative freight costs to different markets in terms of miles per hundredweight of milk delivery.
3. Verify analysis of the commission staff by independent studies of the same problems.

Assistance in amending orders included:

1. Recommendations on quota and classified pricing systems.
2. Recommendations on auditing procedure.
3. Acting as liaison between producer groups and the commission staff in feeling out proposals.

The Virginia Division of Markets has also provided assistance to farmer groups working under the State commission in their adjustment to changes in regulation and in their work on problems beyond the control of the commission.

A co-op in central Virginia was looking for ways to handle excess milk after changes in regulation permitted it to bargain for sales above the base quota. A survey of its production history, potential, and location showed that merging with a neighboring cooperative would make better use of existing equipment and management, and provide a larger supply of reserve milk with which to attract markets. The recommended merger was accomplished.

Six cooperatives were competing for sales of excess milk to handlers for use in military contracts. An analysis of the supply and demand situation showed that available milk and military needs were so close that the competition was causing an instability in milk supplies. Two industry committees were named to promulgate changes in regulations and to plan a central sales agency to improve the marketing situation. An agent from the division of markets was asked to serve as consultant.

To date, no work has been done by the division of markets with distributors regarding State controls. However, there is a tremendous field for work in regard to sales area problems and adjusting regulations to newer practices in selling milk. To mention a few, there are quantity discounts, sales through subdealers, use of bulk dispensers, store promotions, and special sales drives.

The political situation in regard to State control laws is at best very unstable because of the peculiar place milk seems to have in the public mind. For this reason, State divisions of markets should always remain cognizant of the current situation and be prepared to assist the industry to adjust its practices in the event State control is seriously curtailed or thrown out by legislative action.

CONCLUSIONS AND RECOMMENDATIONS

of Dairy Products Work Group

At the opening session, this work group heard reports on and discussed the activities of the National Dairy Council; cooperative programs of State departments of agriculture with national dairy associations and organizations in promoting dairy products; the methods, procedures, and accomplishments of promotional programs in two of the States; and the findings of research on the inadequacy of the diets of many school children. The group reached the following conclusions based on these reports and discussions:

1. While much has been accomplished in recent years, there is still much to be done before milk consumption will be up to the minimum levels for adequate diets.

2. State agencies can coordinate the activities of the various private organizations that are promoting the sale of dairy products. They can also be a central clearing house for promotional literature.

3. State agencies should work with producers, distributors, and others in the dairy industry for the purpose of putting milk-vending machines in factories, office buildings, public buildings, and other locations.

4. Active efforts should be made to promote the sale of milk. One method would be to use well-known personalities in promotion campaigns. Another would be to use teenagers in promotions, surveys, and other programs pertaining to the nutritional value of foods, especially dairy products. Potential teenage consumers of milk can be impressed by the work of other teenagers and by their example.

Reports were made at the second session regarding progress several of the States are making in improving the quality of milk and dairy products, including the quality factor of flavor. It was pointed out that the few programs undertaken to date to improve flavor qualities have shown a high degree of success, and it was recommended by the group that they be continued and expanded. The group concluded that the problem of antibiotics in milk is a strong threat to the dairy industry, and recommended that definite and immediate steps be undertaken to inform producers, cooperatives, and processors of the gravity of the problem. The group felt that, if necessary, regulatory actions should be encouraged to eliminate this threat.

On the afternoon of the second day, the group was informed of some of the newer techniques for determining how milk plant costs could be reduced, product lines could be made more profitable, and route operations increased in efficiency. Services provided by the Farmer Cooperative Service to cooperative dairy plants also were described and discussed.

At the final session, the operation of Federal milk orders and State milk control laws was discussed. The group suggested the following as fruitful areas for expanded work:

1. Programs should be initiated for working more closely with haulers. Since milk is being transported over longer distances, and transported between markets, haulers are becoming increasingly important to efficient and orderly marketing.

2. State agencies should make greater efforts to understand the working and policies of the Federal milk orders so that they may better explain to producers and processors the effects of the orders.

3. State agencies should work with State regulatory bodies to help them adjust programs to the changing market conditions.

Margin to trim

FRUITS AND VEGETABLES

Work Group Session

APPRAISAL OF MARKETING AGREEMENT AND ORDER OPERATIONS IN CALIFORNIA

William J. Kuhrt
California Department of Agriculture

California began its marketing control operations in 1933, with enactment of the Agricultural Prorate Act. During the next 6 years, around 20 different commodity groups tried to use it, but it did not work out satisfactorily. In 1935, our legislature passed 2 more such laws, namely, the California Agricultural Adjustment Act, later known as the Agricultural Products Marketing Act, and the California Marketing Agreement Act. The Agricultural Prorate Act was modified substantially in 1939 by abolishing the separate prorate commission, and is now known as the Agricultural Producers Marketing Act. The Agricultural Products Marketing Act was amended in 1937, again amended in 1939, and re-enacted in 1941, but is not used at this time. The California Marketing Agreement Act was used on 2 products during 1936, but was determined to be unconstitutional and was superseded by a new Act called the California Marketing Act passed in the 1937 legislative session. This Act has become the foundation for most of the marketing order programs in California. Subsequently, our legislature passed 3 special marketing acts as follows:

Dairy Industry Advisory Board Act	1945
California Beef Council Act	1956
California Fish and Seafood Advisory Board Law	1959

These special acts are primarily for promotion purposes and were not brought under the California Marketing Act for special reasons--the first two in order to provide an easier method of producer referendum, and the third for basic legal reasons.

Regulatory Provisions of California Marketing Act

The California Marketing Act contains 5 principal marketing regulatory provisions optional to each program. These are: Surplus control, quality control, advertising and trade promotion, research and surveys, and unfair practices. Surplus control includes authority to determine the extent and nature of surpluses and to put into effect measures to balance supply with market demands. The Act does not authorize production or acreage controls or allotments. It does authorize marketing quotas, control of movement to market, control of the marketing or processing period, and the operation of stabilization and surplus pools. Of the total number of programs in effect, 14 have this authority and 6 are actually using it.

Quality control provisions include authority to establish standards of grade, size, condition, maturity, and packaging, and authority for inspection and certification. This authority is used for two purposes, namely, quality improvement, and to remove lower quality products from the market as a means of bringing total quantity of supply into line with market demands. Of the total number of programs in effect, 20 have this authority, and 13 are using it.

Advertising and trade promotion provisions may be limited or may be extensive to fit the purposes and the budget of the program. All types of media and promotion techniques are authorized and used. Of the total number of programs in effect, 28 have this authority, and 20 are using it.

The research and survey authority covers two types of activity. Research work under marketing programs authorizes urgently needed research—in problems of production, processing, and distribution. When such research work is needed, the board provides the money and enters into agreements with research agencies, such as the University of California and others, to do the work and to prepare the report to the board. The board disseminates the results and puts them into operation. The second type of activity is that of special surveys, which includes work carried on by boards through agencies or by our department to obtain information needed by boards in carrying out their programs. This includes objective sampling surveys to improve crop forecasting, trade surveys to improve promotion programs, and technical surveys to obtain vitally needed information. This work is financed with board funds matched by Agricultural Marketing Act funds and State funds. Of the total number of programs in operation, 26 have this authority and 19 are using it.

The fifth type of authority, that of controling unfair practices of processors and distributors, is used very little. It usually consists of a provision in a marketing program prohibiting the use of a particular practice. Only a limited number of such regulations are in effect.

Administrative Provisions

Each program must provide for an advisory board, actually an administrative committee, nominated by the industry and appointed by the State Director of Agriculture. Each board is responsible for the administration of its own program under the supervision of the department of agriculture. Each program provides for the collection of an assessment from producers or handlers, or both, to defray the costs of carrying out all provisions of the program. Such costs include all expenses incurred by our department of agriculture and other agencies of State government in the administration and enforcement of the program. All assessments are voted by the board, collected and deposited by our department as trust funds, and paid out in response to claim schedules approved by each board and our department. The act and each program provide for enforcement by the department with legal actions handled by the Attorney General of the State.

Policy Provisions of Act

All programs under the California Marketing Act are set up and operated as strictly self-help marketing programs. Each program is initiated by producers or handlers, or both. It must receive industry support at a public hearing and be voted upon favorably by producers or handlers before becoming effective.

The program is administered by the industry board, and all regulations, except those of general administrative character, originate with the board. Each program is self-financed, and no general tax monies are used. Finally, any program may be terminated if the industry is convinced the program is not satisfactory or is no longer needed.

Current Use of State Acts

Number of programs in effect:		
California Marketing Act	30	
Agricultural Producers Marketing Act	2	
Beef Council Act	1	
Total	33	
Number of handlers affected, about		4,000
Number of producers affected, about		75,000
Farm value of products handled pursuant to marketing programs		$855,487,000
July 1, 1958 through June 30, 1959:		
Total assessments and monies collected		9,551,380
Less pool payments and adjustments		1,384,290
Available for use		$ 8,167,090
Expenditures:		
Administration, inspection and research		$ 2,884,965
Advertising and sales promotion		$ 4,959,210

Appraisal

In general, marketing control programs under our California Marketing Act have worked out reasonably well and have accomplished, or are accomplishing, their purposes. These programs are generally acceptable to our producers, and many, but not all, handlers. Some programs are very successful, some moderately successful, and a few are of doubtful value.

The results attained have depended upon several factors, such as (1) the nature and complexity of the marketing problems to be solved; (2) the adequacy of the control provisions of the program to solve these problems; and (3) the competence of the board, the board management, and the personnel of our own department in understanding the actual problems and in devising measures to solve the problems. We have had instances where the program provisions were not fully adequate to solve the problem, where industry funds were insufficient to cover a minimum cost, and where advisory board members were unable to agree among themselves upon an adequate program. We also have had instances where boards or industries have wanted to put into effect types of regulations not authorized by the program or the law, or not in the public interest.

Despite these occasional deficiencies, most programs have accomplished their objectives, or have been amended to make this possible. Surplus control features have generally brought supplies into line with market demands, bringing about reasonable price stability without undue expansion.

Quality control provisions have provided consumers with a better product, and have brought higher net returns to producers and shippers. There are also several examples where quality control has brought supplies into line with market demand without resorting to volume controls.

As to advertising and trade promotion, it is always difficult to pinpoint results, but most of our State programs which have this feature and have had sufficient funds are showing sales increases over a period of years, or sales are holding their own in an unfavorable sales atmosphere. Some weight must also be given to the value of promotion when we see, year after year, hardheaded businessmen, farmers, and advertising executives of processing firms voting large sums of money, their money, to carry on these promotion programs.

The research and survey programs have proved to be unexpectedly popular and worthwhile. Numerous technical studies have been carried on and have brought needed information. Before a promotion program begins, nearly always a trade survey is carried on to determine trade and consumer attitudes, so as to improve the techniques and the approach. Food trade surveys by our bureau of markets have been uniformly helpful and well received. Finally, the objective sampling surveys are pointing the way to improvements in crop forecasting, a need that is becoming increasingly acute.

General Policy Provisions of Our Marketing Act

An appraisal of the general policy provisions of our Marketing Act would include the following:

1. Any enabling act to be successful must have a legislative standard that is sound legally and economically. In 1937, California refrained from using the parity concept, first because it was not being computed on a State basis, and second, because, as computed on a national basis it did not provide either a workable or sound objective for our marketing programs. This was because, for some of our crops, parity would have been too low to have been of help and for other crops too high to be of practical value. Instead, our California Act provides a standard which, stated succinctly, is that any program must be designed to bring about and to maintain a level of prices to producers that is high enough to keep a sufficient number of efficient producers in business to produce needed quantities of the product. Conversely, the price level should not be so high as to fully cover the costs of relatively inefficient producers unless their product is needed by the market. This standard has proved to be workable, flexible, and sound.

2. Financing of marketing programs with industry monies is a sound approach. Although we have had little experience with it, it seems to us that reliance upon legislative appropriations to finance marketing programs, especially promotion programs, would be confronted with great obstacles to success. Difficulties in obtaining sufficient appropriations usually stem from one or more of the following conditions: (a) A general lack of understanding of farm marketing problems, (b) sectional differences, (c) political motivations, or (d) general fiscal problems. Where the people who stand to gain put up the money, they have no one to blame if they do not invest enough or do not spend it wisely.

3. Successful administration of marketing order regulations must be free from partisan politics. If producers or handlers, subject to a regulation, can unilaterally, through political contacts with persons high in State government, obtain modification of a regulation primarily because it happens to affect them adversely, it will not take long for producers and handlers generally

to lose confidence and to throw out the program. And they should. Economic decisions and political decisions do not always coincide. Marketing order decisions, to be effective, must be based primarily upon economic considerations and not primarily political considerations.

4. Much of the success of a marketing program depends upon the industry people themselves; the quality of leadership among producers and handlers; the capacity, unity, and leadership in the advisory board, and the board manager. Lack of understanding, poor leadership, unreasonable demands, or incapable management may cause almost any program to fail.

5. Marketing programs have provided another very important benefit--perhaps one of the most important contributions to the solution of farm marketing problems--that is, the role of the industry advisory board for each commodity. Such a board is made up usually of some of the most capable producers and handlers in the industry, men who know the industry marketing problems. These men, by reason of their selection by their fellow producers and handlers and by the director of agriculture, represent the industry. They have authority to act and have funds to carry on the work. Armed with this background, such a board soon takes over the leadership in solving industry marketing problems. Thus instead of indecision, lack of leadership, lack of funds, or a feeling of lack of authority, so common among farm groups, these advisory boards in most instances have provided the leadership that has been lacking.

6. Finally, I think we can say that the self-help principle has been proved successful. When farmers are provided with legislation under which they can solve their marketing problems themselves, they respond and put forth their best efforts. And instead of leaning upon government for funds, ideas, and leadership, they accept the responsibility for these factors. We are convinced that if these principles are made available to farmers generally, and adapted to the solution of farm marketing problems on both a State and a national scale, we shall see much faster progress in the solution of some of our most vexing problems in agricultural marketing.

APPRAISAL OF MARKETING AGREEMENT AND ORDER OPERATIONS IN NEW YORK

D. M. Dalrymple
New York Department of Agriculture and Markets

As the economic difficulties of the fruit growers increased with competition from other areas, and with a change in the marketing system which decreased their bargaining power, the relatively small, inefficient processors in New York State were getting into more and more difficulties which were reflected in lower prices to growers. It became more and more apparent, even to the most stubborn of our fruit growers, that something was wrong and would have to be changed if the fruit industry was to continue in this area. This was a fertile field for development of new ideas and the adoption of some of the programs that seem to be working a little better in California than in our own system.

In spite of the fact that we have had a very successful Federal-State marketing agreement for milk, with a very intricate multiple-price plan; and in spite of the fact that we have two outstandingly successful local State orders in operation in Rochester and Buffalo, we found fruit growers very easily confused and much opposed to what they called regimentation and government interference in their activities. They had a number of other excuses for not reasoning or thinking improvement through to a conclusion.

After 12 years of wrangling, the Horticultural Society of New York finally took a very strong position for a marketing order, hoping, of course, that there would be some Federal action for the inclusion of fruits and vegetables under the Federal act, and that in the meantime we would push for the adoption of marketing orders and agreements at the State level. So far there has been no action at the Federal level. There is also continued opposition to the inclusion of fruits and vegetables under the act.

Two years ago it looked to some of us as though the political situation in New York, with a Democratic Governor and a Republican legislature, was favorable for the adoption of some laws, drastic in the eyes of our people; that is, the adoption of enabling legislation which should make it possible for us to set up State marketing agreements and orders on fruits and vegetables.

It was about this time that our processors demanded that the development of the law be dropped immediately. This might have happened if the legislators had not found that there were more growers than processors. The opposition of the canners really drove the farmer groups together and the conference board of farm organizations in New York State went to work on it. Enabling legislation was adopted, and in many respects is similar to the California legislation.

I now find myself in the interesting situation of helping administer a bill which two of us now in government helped get passed, and if it does not work our faces certainly are going to be red. Of course, under the New York State order we are faced with an obvious difficulty: Diversion operations and any direct or indirect effect that we might get on price from the operation of an order faces the problem that New York State is a minority producer and that we would not, even if we tried, cause any great effect on price by diversion. We would just furnish our competitors more of a market. It is hoped that, as we progress and as other States adopt this or a similar order, even without Federal legislation, the various States might work together, with their orders, following somewhat the pattern developed through the years by the very successful metropolitan milk agencies.

That left for our consideration, as growers in New York State, the adoption of such marketing agreements and orders as would be generally acceptable, not very controversial, and somewhat limited in scope. In studying the California orders, we found one program carried out under these orders that was generally successful and highly regarded by most growers; that was the adoption of promotion programs by an entire commodity group. Therefore, the first order prepared, that on red tart cherries, was designed to collect funds for the promotion of that commodity. Michigan has a State tax law through which they collect funds. Collection in New York and Wisconsin had been voluntary and had begun to resolve itself into contributions by a few of the loyal with about a third to half the industry not contributing anything.

Some of the processors also cooperated in contributing to the National Red Cherry Institute. Since the State of New York was pretty well convinced that the group doing the promotion work--the National Red Cherry Institute--had for the most part done a very fine job of promoting and selling red cherries, there did not appear to be any reason for the State to enter the promotion picture. So we immediately contracted back to the State Cherry Growers Association the operation of the promotion program itself. A year ago we collected about $60,000; this year it looks as though we will collect a little bit less because of the crop size. No difficulties were encountered; the processors cooperated practically 100 percent, and the cost of collecting was negligible. New York, thereupon, has been able to carry its just share of the load of promoting red tart cherries.

There is some grumbling by growers that the promotional program has not immediately resulted in a higher price for red tart cherries. A small part of the group of producers who in the beginning had felt that the adoption of the enabling legislation would indirectly, and perhaps directly, affect the price were unhappy and have demanded that the program be revised to include bargaining, but there is no provision under our enabling legislation for such activity.

I might mention, in case there may be confusion in some minds about the operation of our marketing order and the operations of the bargaining group of the Cherry Growers Association, that they were not successful in signing up many of the New York State producers for various reasons, but have thrown some dust in the air by attempting to enter into the promotion program, recognizing that before such bargaining can be done there have to be markets established. We, as a department, cannot do much to help this group but we certainly will not try to hinder them.

The apple growers, next in line for the development of a marketing order, were a much more widely dispersed and unorganized group. This was further complicated by the fact that we have 3 large and distinct apple-growing areas in the State, western New York, the Hudson Valley, and the Champlain Valley or northern New York.

About two-thirds of the apples in western New York are processed; probably not more than 10 percent of those in the Hudson Valley and northern New York area are processed; and the total production is equally distributed in the 2 areas, eastern and western New York. The 2 areas have different varieties, the Hudson Valley largely McIntosh and Delicious; western New York largely processing types, Greenings, McIntosh, Cortland, and Baldwin. Most of last winter was spent in trying to set up the marketing agreement. Part of the group in western New York was interested primarily or only in the bargaining program, with its possible effect on price.

It appeared to the joint New York growers that there was no disagreement about the advantage of developing a market before they bargained for it. They also had the cooperation of the processing industry, what there is left of it, on a promotion program.

It was a case of doing first things first, to persuade growers to work together on a promotion program and then to branch out into other activities on which the growers could agree. For instance, in the first meeting of the eastern and western groups of growers, we found that there was a very strong sentiment in western New York for diversion of all apples under the 2½-inch size. In eastern New York, largely a fresh market area, there was no such disposition at all. In fact there was active opposition to such an idea. The easterners felt that western New York folks would probably sort out the apples under 2½ inches and send them into their eastern markets. There was always the fear on the part of the growers who did not grow large apples that they would be driven out of the processed market completely. So this idea of diversion was left for future consideration and it was decided to set up one marketing agreement and order based entirely on promoting and developing markets for eastern apples. We ran into some conflict here, since the New Englanders had a voluntary promotion program and were much concerned over New York's program which might cut out the contributions to the New York and New England Apple Institute, a cooperative venture of the New England States and eastern New York. After a tentative agreement had been reached that our department itself would not enter into a program of promotion, but that, after collecting the money, we would contract with private promotion groups, there was general agreement that we should go ahead.

Regular hearings were held, lists of possible directors of the advisory committee were selected, and the order was voted in by a 75 percent majority. We had two groups in isolated counties that were actively and almost violently opposed to the adoption of the order. The basis of their opposition appeared to be a fear of domination of their industry by government. There was no open disagreement on their part about the promotion program, but apparently these growers wanted the promotion program left on a voluntary basis. This voluntary plan of payment on apples had fallen down, and not over half of the industry, up until the adoption of the order, was contributing any money to the promotion program either in western or eastern New York.

Our growers think it is not particularly practical, or not practical at all, to set up standards for diversion or to divert a crop when the nearby States are not diverting. However, under certain circumstances, growers might, as in New York, suddenly decide to divert apples under 2½ inches, or make it possible to do it under certain emergencies such as existed 2 years ago when western New York had practically all the small apples on the eastern seaboard.

The mechanics of operation of the order include the development, of course, of a complete list of growers. We think we have done reasonably well with this by using the list of storage operators and processors, supplemented by the lists from growers' sales agents and a checkoff list of the extension officers. Our extension agents have a fairly complete list of growers to whom they send information, and by preparing lists of our own we were able to check back against these lists.

Many things are possible if you have a united group of growers to start with. So far, we have not had any opposition that has become vocal or active. It is my personal hope and that of many growers that as soon as we have learned to work together in the collection of funds for promotion, have a little of the edges worn off each other by working together on the advisory committee, and as soon as we develop the know-how on operation of these funds by our department personnel who will be operating under it, we will be able to branch out into activities which may result in increases in prices to growers. And, again, may I say there is nothing about price administration under our order.

Probably this restriction on cost of operation is a good thing in that it creates caution, even though it may cut down a bit on the collections because of our inability to put more people on the road to get the money. It never appealed to me to spend a dollar to collect 2 dollars, when you might collect 1 dollar without spending any money.

We had not foreseen in our order all of the many difficulties which began to show their heads, even before collection really started on November 15. We failed to include in the operation of the marketing order all of our commission people, on the basis that the grower would be more responsible than the commission merchants or the truckers, or the other intervenors who move into the picture between the grower and the market. Assessments were not collected on thousands of bushels, we think, because of our assumption that the grower would be more reliable than the other folks. This is not altogether true. Growers are just like anybody else; they don't pay assessments unless they have to. We find that there are fewer commission merchants than growers, and that now some of the growers' field agents have become commission merchants or have changed the sequence of ownership of apples.

It is all right to make the grower the primarily responsible party, but I would suggest that, in any contemplated orders in other States, all the other elements in the industry be included as collectors, so that you can pick the one that is the least costly and the one on whom the State departments can most easily put their finger.

The stamp tax used in Michigan has certain advantages, but such a plan cannot be used under the constitution of the State of New York, since it is a tax and the money goes into the treasury and would have to be reappropriated each year. This might make the operation of the order a political operation.

Funds from this order can be used not only for promotion and selling operations for apples, but also for market research and for grower information. This covers quite a wide range of activities, we think, and if we are successful in collecting as much money as we think we will, there will be quite a bit of money available for the market research, such as studies of the most effective ways to develop markets.

In the cherry order, some funds will now be used for the development of new methods of picking cherries. There will be some use of funds for finding out which type of applesauce the consumer likes best, and, of course, a relatively small amount for finding out the most effective merchandising methods, in cooperation with other branches of government.

I would not be surprised if we would wind up doing quite a lot of service work with chainstores. It is beginning to look more and more as though the supermarket is not going to have to do much of anything except sit back and rake in the cash, as the various processors and grower organizations seem to be planning to put the commodities on the shelf for these accommodating supermarkets.

FEDERAL MARKETING AGREEMENT AND ORDER PROGRAMS

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Federal marketing agreement and order programs provide the means for regulating the handling of agricultural commodities in interstate or foreign commerce. They may also cover intrastate movement which directly burdens, affects, or obstructs such commerce. These programs, which have operated under the Marketing Agreement Act since 1937, had their origin in the cooperative movement of the 1920's. In many respects, the marketing agreement and order programs are extensions of the cooperative marketing principle. Basically, the objective of these programs is to increase returns to producers through orderly marketing.

Marketing agreements and marketing orders are essentially two identical companion documents. The agreements are simply what the term implies. They are agreements or contracts between those handlers signing the agreement and the Secretary of Agriculture. The agreement applies only to the handlers who sign it. The companion marketing order is identical in scope, and, if issued, applies to all handlers of the commodity in the area, whether they sign the agreement or not.

A marketing agreement may be entered into with respect to any agricultural commodity, but a marketing order may be issued only for specified agricultural commodities, which include, among others, fresh fruits and vegetables, including walnuts, almonds, filberts, and pecans, but excluding apples other than those produced in the States of Washington, Oregon, and Idaho. A marketing order cannot be issued for fruits and vegetables for canning or freezing except for olives, grapefruit, and asparagus.

Hearings are required before any marketing order may be issued and all rule-making activity under any such program must be in accordance with the Administrative Procedure Act, approved in 1946. Also, before any marketing order may be issued, approval must be signified by at least two-thirds of the producers concerned. Marketing orders may be terminated by the Secretary at any time, and must be terminated upon the request of a majority of the producers concerned who produce a majority of the commodity regulated.

Federal marketing orders are administered by the Department of Agriculture. No regulation authority may be delegated beyond the Department. Local committees nominated by producers and handlers are selected to advise the Department and carry out the local administration of these programs. Assessments to cover the local cost of operation are levied upon handlers. Any enforcement action is handled through the Federal courts.

The Agricultural Marketing Agreement Act does not enforce any control over the marketing of any agricultural commodity; it merely provides the authority under which regulations may be undertaken and establishes the types of controls that may be imposed under an order. The permitted controls under marketing orders for fruits and vegetables are quality, volume, pooling, and container regulation. In addition, orders may provide for marketing research and development projects, posting of selling prices, and prohibition of unfair methods of competition and unfair trade practices.

Regulation of quality relates to limitations prescribing the grade, size, quality, or maturity of a commodity which may be shipped during a specified period. The purpose of this type of regulation is to place a better product on the market through prohibiting the shipment of the less desirable grades and sizes. All but one of the vegetable programs employ quality regulations. None employs volume control.

There are several types of volume regulations. One method is the control of the flow of shipments to market during specified periods, in order to fit the supply to the demand and prevent periodic gluts and scarcities in the market. The fruit programs employ this type of volume regulation. Another method of volume regulation involes a determination of the extent of surplus and a plan for controlling the disposition of the surplus. This method of regulation is used for dried fruits and nuts. Some programs provide for shipping holidays during which shipments are prohibited.

Amendments to the Agricultural Marketing Agreement Act in 1954 authorized the regulatory activities under marketing agreements and orders with respect to containers, imports, and marketing research. A regulation may be undertaken to fix the size, capacity, weight, dimensions, or pack of containers which may be used in marketing fresh or dried fruits, vegetables, or tree nuts, provided that no action may be undertaken which is in conflict with the Standard Container Acts.

Container and pack regulations have been issued under several fruit and vegetable marketing orders. Certain undesirable practices in the marketing of fruits and vegetables have been in use relating to the net weights, the numerous sizes and types of containers, and the grades and sizes packed in containers. For example, tomato growers in Florida complained that packers were adding several pounds of tomatoes in the containers, at the expense of the growers, to enhance their competitive position. A regulation specifying the maximum net weights permitted solved this problem. Also, regulations limiting the sizes and types of containers and specifying the range of sizes to be packed eliminated the confusion which existed and did much to standardize the containers and packs to the advantage of the industry and consumers.

Labeling regulations, identifying the grade and size, or regulating other markings onthe container, may also be issued if there is sufficient evidence in the hearing record to justify their use as being incidental to and necessary for carrying out the other terms and provisions of the order. For example, considerable confusion existed in the Florida cucumber industry because of use of extravagant grade and size designations on containers, which became meaningless. Regulations were issued requiring cucumber containers to be marked with the U. S. grade and size designations as shown in the applicable inspection certificates. This type of regulation has corrected a bad practice to the advantage of growers and consumers.

The act, as amended, provides that imports of tomatoes, avocados, mangos, limes, grapefruit, green peppers, Irish potatoes, cucumbers and eggplant shall be prohibited unless they comply with the grade, size, quality, and maturity provisions in effect under marketing orders for domestic shipments, or comparable restrictions. Import regulations have been issued for tomatoes, potatoes, cucumbers, avocados, limes, and grapefruit. These are currently in effect, except for tomatoes. If two or more marketing regulations are in effect for the same commodity produced in different areas in the United States, then the import regulations are designed to comply with the regulations for those areas with which the imports are in most direct competition.

The act also authorizes marketing research and development projects designed to assist, improve, or promote the marketing, distribution, and consumption of the commodities covered. It does not authorize advertising or sales promotion. The expense of such projects is paid from funds collected pursuant to the marketing order. Either surplus committee funds or funds derived from additional assessments may be used for research. In practice, the committees generally do not conduct the research themselves, but "farm out" the projects to qualified agencies, either public or private. Each project, although sponsored by the committee, is cleared by the U. S. Department of Agriculture to avoid duplication of effort.

Four tomato research projects were approved by the Florida Tomato Committee and the Department at an estimated cost of approximately $72,000, not including some matching funds contributed by the Department. These projects include (1) a weekly report to the industry on tomato plantings by districts, together with data on temperatures, rainfall, crop conditions, shipments, and acreage comparison; (2) a pilot-plant project to produce dehydrated tomato pulp for livestock feed from cull tomatoes and to evaluate its nutritive and commercial value; (3) the economic effect of pink tomato shipments on the Florida tomato industry; and (4) an economic evaluation of grade and size standards for Florida tomatoes.

In the Department, we have urged producers not to proceed with a marketing order unless they are convinced that it will accomplish its purpose and unless it is requested by a majority of the producers involved. Sometimes producers and others may become overenthusiastic about the value and benefits to be derived from such a program. One of our problems has been that of deflating overexpectations--to make it clear that benefits to be expected through marketing order operations are limited, and that the benefits derived are no greater than the effort expended.

Marketing agreement and order programs are one means by which growers and handlers may discuss mutual problems and, within the framework of their program, decide what is in their best interest, and proceed to put their conclusions into effect. We have found that the process of working together in developing and operating a marketing order often brings about better understanding and improvements in the working relationship between the various factions in an industry group. The administrative committee of the marketing agreement and order program can serve as a focal point for carrying on beneficial industry activities beyond the program.

There has been a gradual increase in marketing orders over the years. At present, there are 37 fruit and vegetable Federal Marketing Agreement and Order Programs in effect, covering a wide variety of commodities. Sixteen orders are for fruits, 14 for vegetables, and 7 for dried fruits and nuts.

WHAT PLACE DO STATE TRADEMARKS HAVE IN IMPROVING THE MARKETING OF FRUITS AND VEGETABLES?

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State trademarks (or labels or seals of quality) have a place in improving the marketing of fruits and vegetables. The place depends on the products, their production and marketing situation, and on how the trademark programs are developed and used. If used properly, they can do two things.

First, they can help meet the demands of today's mass buyers and of consumers. How? By helping supply uniform, high-quality fruits and vegetables in volume. Research at Purdue University and elsewhere shows that large buyers demand and usually get these things, in addition to a competitive price, from their sources of supply of fruits and vegetables. State trademarks can help a State meet these demands.

Second, State trademarks can help provide fruits and vegetables that have many of the characteristics needed for successful promotion. These characteristics are listed below; the more of them that are present, the greater likelihood there is of being able to successfully promote a product:

1. Differentiation--A "different" product. This may be done through the State trademark, packages, or other ways. The point is that the product needs to be different in some way so there is a reason for buying it instead of something else.

2. Quality consistent with claims. It doesn't always need to be the best quality product, but it should be consistent with claims and usually of good quality. Customers who find quality to be below that claimed for the product are not likely to come back.

3. Uniformity--Why? We are in a day of mass buying and mass merchandising. A uniform product enables large buyers, such as buyers for supermarkets, to buy for their many units with a minimum of expense and trouble. "Supers" handle more than three-fifths of total food sales. Handling, pricing, and advertising also are made easier. Similar advantages accrue to processors and assemblers as well as to distributors. And more important, uniform products enable consumers to buy with greater assurance of what they are getting and help lead to repeat sales.

4. Adequate volume. This gives many of the advantages listed above--ease in buying, pricing, and advertising for assemblers, processors, and distributors, as well as consumer convenience. State trademarks help buyers to get volume.

5. Competitive price. A 1957 Purdue study showed that price was one of the major factors considered by buyers for 96 supermarkets in selecting their sources of supply of watermelons and peaches. This is probably true elsewhere for other buyers and products.

6. An increasing demand trend. It's usually easier to promote a product which is enjoying an increasing demand trend than one with an adverse trend. With sales expanding, there is opportunity to strive for part of an increasing total.

7. Strong hidden qualities. For example, the purity of a drug, the purity of a grower's apple cider, or the low fat content of turkey.

8. Strong emotional buying motives. Examples here are buying oranges for health or milk for protein.

9. Adequate budget. Not all promotion needs a large budget, but it is well to remember that promotion is often costly. If an adequate budget isn't available, chances for success are decreased.

If these characteristics exist, a product has a greater likelihood of being successfully promoted. And it should be remembered that (1) each case is different, and (2) how promotion is done may be as important as the amount of money used.

State trademarks can be helpful in providing several of the above characteristics--the different product, the good product, the uniformity, and the volume. And, of course, the price must be competitive. If the above factors are present, the needed promotion budget is often provided by the retailer, since it gives the retailer fruits and vegetables with many of the things needed for successful promotion.

State trademarks can help do the above things, but they are no cureall. Several States, such as Maine and New Jersey, report considerable success with them on various agricultural products. Others have had little or no success.

In thinking about the place of trademarks, it is well to remember several things: (1) It is unlikely that per capita consumption of fruits and vegetables will be increased by their use; (2) some States will probably get more of the market at the expense of other States; (3) it is probable that competition between States will be increased by use of State programs, although such competition would probably be healthy; (4) the cost of marketing may or may not be increased by the use of State trademarks, depending again on how they are developed and used; (5) it will be difficult to establish State programs where production units are small and scattered, where the marketing season is short, and where markets are so widely scattered that intensive, effective coverage cannot be obtained.

What about the success of the Indiana trademark (Seal of Quality)? Under a matching fund project designed to improve the orderliness and effectiveness of marketing Indiana agricultural products, work has been conducted with industry groups that resulted in enabling legislation for an Indiana Seal of Quality.

How were activities organized to develop the Seal of Quality? Indiana has an Indiana Farmer-Retailer Committee composed of leaders in food production, processing, distribution industries, and educators. This statewide marketing group drafted the Indiana Seal of Quality legislation, introduced it in the legislature, and helped it become law. On this committee are several of the strongest agricultural interests in Indiana. After the legislation became effective, it was found desirable to amend the enabling act, and the committee was again active in helping obtain the needed amendments. Work with this State marketing committee has been found to be an effective method of working on statewide marketing problems.

What has this Seal of Quality accomplished in terms of benefits to producers and marketing agencies in Indiana? To date, very little. The project was used in a limited way on watermelons, but because of lack of central packing, difficulty of applying seals, problems of seasonality, and low volume of Seal of Quality watermelons for merchandising, interest has been limited. After the growers used the Seal of Quality program one season, it was decided not to offer the program to growers of other commodities until the legislation had been amended. This was done in the last session of the legislature. Steps are now being taken to introduce the Seal of Quality program on eggs in a test market in the spring or summer of 1960 (as soon as the State egg board establishe a Fresh Fancy Grade for eggs). At present, there appears to be little interest among growers of Indiana fruits and vegetables in use of the Seal of Quality program. Part of this lack of interest is attributed to the fact that most fruit and vegetable growers in Indiana are small, scattered growers without central grading and packing facilities. For these reasons, it is doubtful if the Seal of Quality will be widely used on fruits and vegetables in Indiana unless success of the program with eggs and perhaps other products makes the benefits of use of the program more apparent to the Indiana growers.

In conclusion, it appears that State trademarks have a place in improving the marketing of fruits and vegetables if, in even a few States, they can (1) help meet the demands of today's mass buyers and of consumers, and (2) help provide fruits and vegetables that have many of the characteristics needed for successful promotion.

SELF-HELP THROUGH BARGAINING COOPERATIVES

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American farmers have long applied the principle of self-help by working together in cooperatives. In colonial times, farmers informally cooperated in such group activities as barn-raisings, husking bees, and land clearing.

Over the years, as farmers began to produce more than they could consume, they used cooperative techniques for marketing them. Gradually farmers evolved the form of cooperative enterprise known today.

The use of cooperatives of the bargaining type is a relatively new development among growers of fruits and vegetables for processing. And attention is being focused to an increasing extent on the role and possible benefits that growers can obtain from these cooperatives.

While it is my purpose here today to review some of the reasons for this growing interest in bargaining cooperatives, and to point out the way they are set up and operated, I think we should first outline or define what we mean by bargaining cooperatives.

Bargaining generally refers to a process through which two or more persons or groups, each having differing goals or results in mind, arrive at an agreement more or less satisfactory to both parties. This process is also called negotiations, or sometimes, depending on the circumstances, higgling or haggling.

Of course, in the business world, bargaining takes place between buyers and sellers of commodities, and the agreement being sought deals with price and other terms of sale. Implied also in this negotiation process is the desire of each party to maximize his gain, or at least to minimize his loss. The agreement that is reached must be at least somewhat satisfactory to both parties, or no bargain is achieved. For this reason, compromise is generally involved in the process.

Likewise, the exact agreement reached, or the final terms of the bargain, depend on the relative strength of the two parties and on their strategy and skill. This strength may be real in terms of competitive or economic forces, or it may carry strength in terms of public opinion as to what is judged to be right or wrong.

Then again, strength in bargaining can arise from giving the appearance of having formidable economic or other resources. Or, in other words, the practice common in poker playing known as "bluffing" is often a real element in this area of exchanging economic goods in an imperfectly competitive market situation.

This outline of the bargaining process is, of course, rather general and oversimplified, but it shows the nature of the situation and the role and goals of the participants.

Now we come to the other term, "cooperative." Without going into details or a theoretical discussion, we generally use the term in agriculture to refer to an association of several persons or firms designed to provide the members, as users of the cooperative, with economic goods or services in a way that will bring about greater benefits to the members than they could achieve individually. Of course, from a legal standpoint, the characteristics of a cooperative are given in the Capper-Volstead Act.

It should be recognized that cooperatives of many types can be used to improve or maintain the bargaining position or strength of their members. For example, a farm supply cooperative, through the joint efforts of its members, can improve the bargaining or competitive position of the members as buyers of farm production needs. And a processing cooperative, by changing the form of the members' products and by retaining control over their products through the marketing channels, can strengthen the members' competitive position as sellers.

However, through general usage over the years, the term "bargaining cooperative" refers to a cooperative whose main purpose is to negotiate price and other contract terms involved in the sale of members' commodities to processors. It does not include cooperatives which physically handle or process the crops, or associations of the agency type that perform only a selling function in the marketing of crops in a fresh or unprocessed form. Thus, while the term bargaining, in a broad sense, can refer to many types of cooperative self-help, we are using it here in a specific way; that is, it refers to cooperatives whose main purpose is price negotiation.

Cooperatives of the bargaining type we have just defined have been used for many years by dairy farmers, and it is estimated that there are more than 200 dairy bargaining associations in operation today. In addition there are some 40 sugar beet and some 20 egg bargaining cooperatives. However, the most dramatic growth of bargaining cooperatives is currently in the processed fruit and vegetable industry. There are now at least 40 fruit and vegetable bargaining cooperatives, over half of them formed within the past 5 years.

Fruit bargaining associations have been organized to negotiate for the sale of cling and freestone peaches, red tart cherries, apples, figs, olives, and berries. Vegetables represented by bargaining groups include tomatoes, peas, asparagus, sweet corn, cabbage, and snap beans. In addition, numerous groups are considering the possibilities of bargaining associations to market grapes, raisins, apricots, filberts, broccoli, lima beans, potatoes, and even pulpwood to papermills.

The major fruit bargaining cooperatives are in California, the Pacific Northwest, and the Great Lakes area. Some of the more important vegetable associations are in Washington, Utah, Ohio, New Jersey, and New York.

In considering some of the reasons why growers of fruits and vegetables for processing have been looking more and more at self-help through cooperative of the bargaining type, it seems essential to begin with an examination of some fundamental changes that have been, and are, taking place in the marketing of farm products. For it is the structure of the market, and the conduct or behavior of the various marketing organizations in the market, that explain the growth and development of bargaining cooperatives.

Fundamental changes have taken place in food marketing. The day of the corner grocery is about over, and in its place we see the large modern supermarket geared to mass distribution and self-service of food to a rapidly expanding population. There has been a decline in the number of food stores, but an increase in the average annual volume per store.

There is also an increasing concentration of large stores, both chains and independents. In 1956, supermarkets--those doing a business of over $375,000 a year--accounted for 9 percent of the stores in the country, but had over 62 percent of total sales. Only 7 years ago, in 1952, supermarkets had only 43 percent of total sales, and in 1940, their share of total sales was about 25 percent.

The just-released Federal Trade Commission's "Economic Inquiry into Food Marketing" states this trend another way. Chains with 11 or more stores accounted for 29 percent of total food store sales in 1948, but in 1958 they were doing 37 percent of total sales.

Along with this decrease in number and increase in size of retail stores has come an integration of marketing functions. The wholesaling function has largely been integrated with retailing, either by retailers purchasing wholesale facilities, forming cooperative wholesaling groups, or making contracts with private wholesaling firms.

This integrating process has now entered the next step in the marketing channels, with retailers and processors vying for control over this phase of integration. The struggle is seen in the processors' attempt to maintain contact with the consumer through promotion of national brands, while large-scale retailers see advantages in pushing their own private brands.

These changes at the retail level have also led to expansion and merger in the processing sector of the economy. The value of canned fruits and vegetables rose from $1.6 billion in 1947 to $2.2 billion in 1954. During the same 7-year period the number of canning companies declined from 1,856 to 1,461. The 20 largest canners in the industry accounted for 46 percent of the total business in 1947, and 52 percent in 1954.

What are the effects of these trends toward large-scale operations and vertical integration on the producers of the raw product? Before considering this question, let us first look at the market behavior of these large-scale marketing firms as shown by their procurement policies.

In order to meet the needs of mass distribution, retailers need an assured supply of products, and these products must meet certain specifications as to quality and appearance. Because of the complexity and uncertainty of using price (often it is an estimate of a future price at time of harvest) as a device for integrating supplies with demand, retailers have turned to the integration of the various marketing functions, either by acquiring wholesaling and processing facilities or through the use of contracts.

Processing firms, too, need to assure themselves of an adequate supply and flow of raw products for efficient and low-cost operation of their plants. Thus, contracts have been long used by processors as a coordinating device to integrate or guide the flow of commodities between the production and processing stages of the food industry.

Thus, procuring supplies through contracts has developed as a means of integrating various stages of food marketing from the retailer to the wholesaler, to the processor, and finally to the producer. And it is in this use of contracts that the chain of events involved in the integration of food marketing is currently having a major influence on producers.

The grower-processor contracts also serve as a pricing mechanism. Thus the price and other terms of sale contained in them are of major importance to growers' returns. The contract price is determined by negotiations between the buyer (processor) and the seller (grower), with the competitive position, or bargaining strength, of each influencing the level at which price is set. In an industry with characteristics such as those just described--few buyers and many sellers, perishable crops with short marketing seasons, and lack of information on price--the market is essentially local in nature and the seller is usually at a competitive disadvantage. This is in contrast to the market situation for other commodities such as wheat, cotton, or corn, which are sold in national, or even worldwide, markets.

Their relatively weak competitive situation has caused many processing crop growers to seek methods for strengthening their bargaining position. Where other alternatives--such as production of other crops, formation of a processing cooperative, or government program--do not seem feasible, many growers have turned to cooperatives of the bargaining type. Through the formation of a bargaining association, individual growers voluntarily join together and, by signing membership agreements, agree to market their crops jointly. Thus, by horizontally integrating their marketing functions, the number of sellers in the market is reduced. Price determination is then a matter of negotiation, or higgling, between one or a few sellers and one or a few buyers.

While there is a range within which price must be negotiated, the actual level of the price will depend on the relative bargaining strength of both the buyer and the seller. Where a bargaining association has sufficient tonnage signed up and adequate marketing and economic information, the bargaining strength of the seller (an association) and the buyer (a processor) are more nearly equal.

Just as various economic forces have influenced the development of fruit and vegetable bargaining cooperatives, so legal aspects have been important, not only to their existence as an economic organization but also to the legality of their operations, which are directed toward influencing price through joint action.

Until enactment of the Capper-Volstead Act in 1922 and laws in every State providing specially for the organization of farmer cooperatives, such cooperatives frequently encountered restraint-of-trade or other antitrust problems even in their organizational phase.

At the Federal level, the Capper-Volstead Act has made it clear that the elimination of competition between individual producers, which occurs when they act together through a cooperative, would not in and of itself constitute a Federal antitrust law violation. State statutes have now afforded similar assurance as respects State antitrust or restraint-of-trade laws.

Bargaining cooperatives organized in compliance with the Capper-Volstead Act can legally attain a strong position in a particular area or product so long as they achieve this position by voluntary attraction of membership and voluntary growth. They may use this position to enhance price.

However, a Capper-Volstead cooperative cannot "unduly enhance" price, and it cannot operate with complete immunity from the restraints of the Sherman Antitrust Act or the prohibitions of the laws administered by the Federal Trade Commission. In addition, various economic forces, such as competition from other geographic regions and from other food products, also set limits to the price-making power of these associations.

Now let us take a look at how bargaining associations are organized.

The marketing function they perform is their major distinguishing feature. However, their organizational structure is similar to that of most other cooperatives. Growers need to organize their bargaining association in such a manner that they can guide and control it in line with the objectives it is to accomplish.

This is done by incorporating under the cooperative act of the State, and by setting up bylaws stating the objectives and operating framework of the association.

In addition to bylaws, bargaining cooperatives nearly always have membership agreements. These agreements, or contracts, state in writing the rights and duties of both the members and the association relating to the members' crops marketed through the association. The agreements are generally of the agency type; that is, the association becomes the agent for the grower in selling his crops, and they all require members to market through their cooperative all the crops they produce for processing that are bargained for by the association.

An elected board of directors, operating within the framework of the bylaws, establishes policies and procedures needed to carry out the objectives of the cooperative. Since directors play an important role in the negotiating functions, the boards of directors are relatively large, most having 11 to 15 members. A manager, employed by the board, conducts the daily affairs of the association. However, because the associations do not physically handle or process members' crops, the number of employees is generally small. Typically there is a full-time manager plus a secretary and a fieldman, either or both of whom may be part-time.

Most bargaining cooperatives are of the centralized type; that is, growers hold membership directly with the association. Where the area served by the association is large, statewide or covering several States, the associations are divided into districts. Some associations, however, are federations. Individual growers belong to a local association and the locals in turn form the membership of the federation. Generally, negotiations are conducted by the main organization rather than by either the locals or districts.

A common requirement for membership is that members be bona fide agricultural producers. Many associations thus permit membership of firms, partnerships, corporations, and associations engaged in agricultural production. About two-thirds of the associations vote on the basis of one vote for one member, while the rest vote on the basis of tonnage sold through the association.

Capital requirements of bargaining associations are relatively small, and needed chiefly for operating expenses. Practically all the associations are organized on a nonstock basis. The most important source of funds is deductions made from proceeds received by members for their crops.

Processors are authorized to make the deductions from each grower's payment check and then forward the accumulated deductions to the association. Several associations also obtain funds from a processor service charge. Through this charge, the processor pays the association for services performed in soliciting tonnage. Since the associations operate on a cost basis, any funds in excess of the expenses belong to the members in proportion to their patronage in the association.

The basic service performed for members by fruit and vegetable bargaining cooperatives is negotiation of the contract price and other terms involved in selling members' crops to processors. Before negotiations can actually take place on the various contract provisions, however, it is necessary for the association to be recognized by the processor as the sole bargaining agent (or exclusive sales agent) of the members.

This recognition as sole bargaining agent generally involves a testing of the basic question whether or not the cooperative has sufficient tonnage signed up to be of concern to the processor. If the processor cannot obtain enough raw products outside the cooperative, recognition is usually forthcoming. On the other hand, if the cooperative tonnage signed up is not sufficient, or if the association is not stable enough to maintain its membership, recognition often is not achieved.

Preparations by the bargaining associations for their negotiations involve various meetings of members, directors, and bargaining committees, before planting time for the vegetable associations, or harvest time for the fruit associations. Basic to these meetings, and to the results of the negotiations, are the economic and marketing data the associations have available.

As their representatives in the negotiating sessions, the vegetable associations generally have several bargaining committees, each committee assigned to negotiate with a separate processor. The fruit associations' negotiations with each processor are conducted by the individual association's board, or a committee of the board plus the manager.

With vegetable associations, negotiations revolve around terms contained in the contracts used by processors in buying raw products from growers. Between the negotiating sessions with the processor, the association's committee usually discusses proposals and counterproposals at meetings of the board and sometimes at meetings of members.

When the association and the processor reach agreement on the contract's terms, the association then "approves" each of the processor's contracts by placing the stamp of the association and the signature of the president on each contract. Members, who are bound by the membership agreement not to sign any but "approved" contracts, then individually sign these processor contracts.

The fruit associations, in performing their function as exclusive sales agents for the members, generally use contracts of sale which are signed by each association for its members, and by each processor.

A contract with unique features is used by some of the West Coast associations. The contract is unique in that it is an enforceable contract for the sale of fruit in advance of the harvest, although no price is specified in it. Instead of a specific price, the contract states that the buyer must pay a "reasonable price."

Other provisions in the contract state the methods for determining the reasonable price. Before the harvest season, the contract requires each association to announce an "opening price" it believes "reasonable." This opening price is based on the association's analyses of economic and marketing data, plus a series of individual meetings, or consultations, with each processor to obtain the feeling of the industry.

If the opening price is accepted by a certain number of processors, it becomes the "reasonable" price and is then binding on all processors who have previously signed contracts with the association.

If the opening price is not accepted by the required number of processors, the association can make another price offer, the same or different from the first. While the situation has never arisen, in the event the second price is rejected, the "reasonable price" would be determined by a court of law.

Benefits realized by members of some associations have led to the formation of similar associations by others. Still other growers are currently considering how they can help themselves through the use of such organizations to market their particular crops.

The organization and operation of a bargaining cooperative is not without problems, however, and should be undertaken advisedly. As a first step, careful study must be made of all available information and alternatives to determine whether or not there is an economic need for a bargaining cooperative. If no economic need exists, and an unsuccessful attempt is made, it may actually weaken the growers' current position.

In examining the feasibility of a bargaining cooperative, growers should consider the following points.

1. Tonnage.--The basic source of strength in a bargaining cooperative is the combined tonnage of its member-growers. Unless it has a sufficient proportion of tonnage signed up to be of concern to the processor, an association cannot effectively negotiate price and other contract terms for its members.

It is axiomatic that the higher the proportion of tonnage controlled, the greater the bargaining strength. However, the proportion needed by an individual association depends on the conditions in its particular market situation, such as the nature of the ownership of the tonnage not signed up with the association. In 1956, nearly one-half the associations represented between 25 and 50 percent of the tonnage in their area, and another one-fourth of the associations represented between 50 and 75 percent of the total.

2. Economic and marketing information.--The collection and analysis of essential marketing and economic data are basic to realistic price negotiation and long-run success of bargaining associations. With incomplete or inaccurate data, the association cannot fully develop the bargaining strength that lies in the joint sale of its members' combined tonnage.

The collection and analysis of this needed information should be a year-round activity, and should be centered on the essential factors which influence price and other contract terms. In many cases, research may be needed to determine the nature of these economic relationships.

3. Management.--Lack of efficient management is one of the major causes of failure among cooperatives. For effective operation, a bargaining association requires a manager with a high degree of specialized skills and talents. He must understand the commodity and the economics of the industry.

In addition, management must have ability to build and maintain membership and membership relations, as well as good processor and public relations. Because of the important part directors play in the negotiating process, they too need to be not only good businessmen but also men who can develop and hold the confidence of both members and processors.

4. Membership relations.--Effective negotiations require the support of an informed membership. Management must provide members with full information on the economic problems involved in the marketing of the members' crops, as well as on the association's need for full support from its members.

Members' needs and attitudes must also be made known to management. Without this two-way flow of information the strength of the association, which depends on the combined actions of the membership, may disintegrate at a crucial point in the negotiations.

5. Approach.--Growers form bargaining cooperatives to improve the price of their crops for processing. While the price received per unit in a particular year is important, a broader approach to prices is more likely to bring greater long-run satisfaction to growers.

Stable prices that are fair or reasonable are probably a better goal for an association than a goal of higher grower prices, no matter what happens. In addition to the price per unit, attention should be given to other contract provisions, since these terms, also, directly or indirectly affect growers' net returns.

The goals and actions of an association should also be kept in line with its responsibilities to the entire industry. The processor, retailer, and consumer are all essential factors in the marketing of the growers' crops, and if the actions of an association, especially as it develops greater bargaining strength, are unwise or unreasonable, they can jeopardize the position of the association and the industry. Reasonableness of demands, cooperation with the industry on joint problems, negotiations in good faith, and other actions that are based on an industrywide approach, all contribute to the long-run success of a bargaining cooperative.

HOW NEW FRUIT DATA BEING DEVELOPED IN FLORIDA ARE BEING USED

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The primary objective of the matching fund fruit project in Florida is to make available to the industry a good early-season forecast of citrus production. Before discussing the use of these forecasts, let's look briefly at why forecasts are needed, how they are made, and then at the forecasts of Florida's orange production for the past 15 years.

Considerations of supply and demand for citrus are no less important than for other commodities. Since the turn of the century, Florida citrus production has about doubled every 20 years. At present there are about 45 million trees grown on 650,000 acres. Production is now almost 130 million boxes per year. This explosive growth has resulted in periods of oversupply such as occurred in the mid-forties before the advent of concentrated juice. So far, fortunately, such periods have been of short duration. Utilization has not lagged behind production. Demand has increased along with supply. Short-run demand, however, at least in recent years, has been only moderately elastic, so that price is quite sensitive to supply. As a matter of fact, one of the industry economists has concluded that within a crop year, a change in the supply of oranges of 1 million boxes affects price per box by about 5 cents. Good estimates of potential supply are needed by the industry at the beginning of the long, 10-month harvesting season. Otherwise, price inequities are almost certain and orderly marketing almost impossible.

For many years, the U. S. Department of Agriculture has provided supply information in the form of production forecasts. Preharvest forecasts are made of a number of important crops. These forecasts are based entirely or in part upon judgment estimates of yield, condition, or other related factors. Florida citrus forecasts are no exception. Grower estimates of citrus condition and of relative production are collected by mail, and the averages are computed and then charted. This is to remove persistent bias and to project trend. The charted relationships are interpreted by experienced statisticians who follow the crop closely from bloom to harvest. The chart indications are then evaluated, using past experience, personal observation, industry estimates, and any other pertinent data. The result is a forecast of citrus production. One such forecast is made each month from October to July.

Along with the increase in citrus production has come a desire by the industry for greater precision in early-season forecasts. This desire has become more pronounced in recent years. About 5 years ago, research was started by the Florida Agricultural Experiment Station in cooperation with the U. S. Department of Agriculture, the purpose of which was to develop other indicators of citrus production that would supplement those already being used. From this research came techniques for making fruit counts and measurements and for converting these data into indications of production. In the summer of 1955, a matching fund project was set up and an operating program of fruit counts and measurements started. This program consists of 3 surveys. One estimates the number of fruit per tree and the size of the average fruit in August. The other two measure droppage since August and fruit size at monthly intervals during the rest of the season. Fruit numbers are estimated by counts of the fruit on parts of trees. These counts are made in a probability sample of about 600 orange groves and 400 grapefruit groves. Four trees in each grove are selected and about one-tenth of the fruit on each tree is counted. Fruit size is estimated by measuring the circumferences of 10 fruit on one tree in each of about 250 orange and 250 grapefruit groves. Droppage is estimated by fruit disappearance from one small, identical limb on each of the same trees in the fruit size sample. Sampling errors of fruit numbers, droppage, and size are about 2 percent, 5 percent, and 1 percent, respectively. These sample estimates of fruit numbers, size, and droppage are used to compute an indication of production. Fruit numbers are adjusted by expected fruit losses. Fruit sizes are projected to harvest, taking into account variations in crop maturity as measured by fruit movement. On the basis of projected harvest size, adjusted fruit numbers are converted into expected boxes. This objective indication is considered along with those based upon grower estimates, and is amalgamated into the production forecast.

The table below was made up from U. S. Department of Agriculture releases. It compared the October orange forecast with harvested production for the past 15 years.

	Orange production (millions of boxes)		
Season	October forecast	Harvested	Ratio, final to October
1943-44	38.5	46.2	1.200
1944-45	52.0	42.8	.823 (Hurricane, Oct. 1944)
1945-46	50.0	49.8	.996
1946-47	62.0	53.7	.866 (Freeze Feb. 1947)
1947-48	49.5	58.4	1.180
1948-49	64.0	58.3	.911 (Drought)
1949-50	61.0	58.5	.959 do.
1950-51	62.5	67.3	1.077
1951-52	72.5	78.6	1.084
1952-53	81.0	72.2	.891 do.
1953-54	79.0	91.3	1.156
1954-55	96.0	88.4	.921 do.
1955-56	91.0	91.0	1.000
1956-57	95.0	93.0	.979
1957-58	102.0 (80.0)	82.5	.809 (1.031)
1958-59	85.0	86.0	1.012

In the brackets are comparisons between the January 1958 forecast and harvested production. The crop was reappraised by a sample estimate of frozen fruit after the freeze.

From this table may be inferred the contribution of the matching fund project. The project became operational with the 1955-56 season. Admittedly, we have been lucky for the last 4 years. That we have been within sampling errors is not surprising. However, we have been extremely fortunate in predicting size and droppage rate. In the future, all we can do is to try to learn more about these factors and hope for the best.

As mentioned earlier, the citrus industry needs preseason supply information. Production forecasts are useful to growers, buyers, packers, processors, shippers, haulers, and merchandisers. The size of the prospective crop influences operating and marketing decisions throughout the industry. The need for advertising and fresh fruit regulations also depend in part upon crop size. Rather than make generalizations about industry uses, let's take a specific example--the Marketing Evaluation Report for 1959-60 prepared by Florida Citrus Mutual. Mutual is a grower organization which claims a membership of 10,000 of Florida's approximately 12,000 citrus growers. The Marketing Evaluation Report is made for the guidance of Mutual's members in marketing this season's citrus crop. I will summarize some of the conclusions reached. Incidentally, these conclusions are offered as illustrations; we do not necessarily subscribe to them.

1. Supply.--The total supply of oranges in prospect for the 1959-60 season is about the same as it was for 1955-56 and 1956-57, and about 3 percent greater than last year. On a per capita basis, the supply available is 5 percent less than the 1955-56 and 1956-57 seasons. Inventories of processed citrus products are less than had been anticipated earlier in the season.

2. Demand.--Record growth in population continues. Consumer disposable income is up 15 percent since 1957, and up 72 percent since 1949. Food store sales are at an all-time high.

3. Marketing outlook.--Supply-demand relationships will bring about certain adjustments in the pricing pattern. However, 1959-60 should be a relatively profitable one for the grower with overall returns for oranges considerably more than in the 1956-57 season ($1.40 per box) but less than last season ($2.88 per box). The industry is better equipped than ever before to carry forward effective advertising and merchandising programs, and by operating in an orderly manner, can obtain the real value for its fruit and fruit products.

This last statement about the need for orderliness to obtain true value brings us back to the matching fund project. We hope that, as a result of this project, better supply information will be produced. We also hope that this information in turn will contribute to more orderly and equitable markets and that the best interests of the citrus industry as part of agriculture will be served.

HOW NEW FRUIT AND VEGETABLE DATA BEING DEVELOPED IN ILLINOIS ARE BEING USED

J. A. Ewing
Illinois Cooperative Crop Reporting Service

The Illinois fruit industry is a highly dynamic one from any point of view. No Illinois crop is as much influenced by uncontrollable weather factors which may prevent a full crop or deny any. Few crops require as much care in both production and marketing. Few vary as much in quality, and quality is an important determinant of price. Few are as competitive with producing areas in other States and few fluctuate as much in price, both within and between seasons.

During the last 20 years, the farm orchard has all but vanished and the tree population has declined by almost 75 percent. This period has also witnessed the abandonment of large numbers of commercial orchards and a consolidation of many into larger units. Many of the fine grassland stock farms in southern Illinois were in bearing orchards not many years ago. The number of apple and peach orchards with 100 or more trees now numbers less than 1,000, and less than half of these have over 500 each. Production, however, has not declined in proportion to the population because, with improved management, yields per tree have more than doubled.

Fruit is a minor commodity in Illinois, but it has major marketing problems. It not only has these annually, but the industry must look also to the years ahead, for fruit growing is a long-time enterprise, as far as individual units are concerned. Where is the fruit now and where will it be in the next 5 to 10 years? How much is produced now and what is the outlook for the coming seasons? What are the proportions of the principal varieties now and what will be the variety picture a few years hence?

The Crop Reporting Service attempted to provide this information by means of comprehensive 5-year surveys, only to find these were out of date by the time such detail could be summarized. Quinquennial measurements could not keep up with the rapid declines caused by heavy winter kill and economic abandonment and pullout because of low profit and inferior varieties, nor could it sense the stabilizing of the population and the reverse in trend should that occur.

Since 1954, an annual survey of the apple and peach tree population on a bearing and nonbearing basis has been made. The data are gathered in the spring after the season is over for new plantings and a count of trees of bearing age for the current crop can be made. This information is released at the beginning of each season. It provides basic data on number of bearing trees for the season at hand, the number of nonbearing and the relation of each to the other and proportions of the total. At the end of the season, State farm census data are used to check these estimates. In 1954, the total apple tree population in commercial counties was 680,000, with 530,000 bearing and 150,000 nonbearing. This year the total stands at 590,000, with 410,000 bearing and 180,000 nonbearing. The total peach tree population in 1954 was 800,000, with 630,000 bearing trees and 170,000 nonbearing. It was 650,000 in 1959, with 520,000 bearing and 130,000 nonbearing trees.

An annual survey of the fruit tree population was a new venture which seemed justified in order to measure the extent of the yearly change. As experience was gained, the annual survey was modified to obtain a measure of new annual plantings with a breakdown between fall and spring settings. This year these plantings were broken down by numbers of trees of each variety, providing an indication of the extent of adoption of the new and more desirable varieties, when these may be in production, and in what proportions. Apple tree settings last fall and this spring amounted to 26 percent of current nonbearing trees, and peach tree settings amounted to 46 percent of the nonbearing population. Indications are that the Elberta will lose ground to the newer varieties of peaches, and that among the apples, the currently popular Jonathan and Golden Delicious will continue to increase.

In order to obtain current information on the population by varieties, questions were added to the annual survey on production by varieties. A by-product is the average yield per tree by varieties for all varieties, and this serves as a check on the monthly experimental questions on yield per tree carried through the growing season.

The annual tree survey is made by mail, with a followup request of non-respondents. The list is taken from all fruit growers enumerated on the annual farm census who report 100 or more apple trees or 100 or more peach trees. A card file of orchards of 100 or more trees is now being started and it is hoped that, once this is completed, it can be kept up to date. With less than 1,000 orchards of this size, the plan seems feasible.

For the past several years, the disposition survey has carried a more detailed breakdown than required for the regular estimates, in order to provide a measure of methods of marketing. It shows the proportion of the apple crop packed is usually about 50 percent, that sold in bulk to truckers about 25 percent, that sold in bulk to local trade and processing each about 10 percent, and on-tree or orchard-run, about 5 percent. For peaches, the proportion is about 40 percent packed; bulk to truckers and local trade, each about 25 percent, processing and on-tree or orchard-run, about 5 percent. The proportion of apples packed varies far less than the proportion of peaches marketed in this way. In years of light crops, pack of the latter is small, with an offsetting increase in bulk sales to local trade. Bulk sales of apples to truckers appear to be increasing slightly, but the proportion of peaches marketed in this manner has increased significantly.

Illinois commercial apple and peach orchards are widely distributed throughout the State, and as a result the harvest dates always vary and weather conditions may cause extreme fluctuations in production. For these reasons, the Crop Reporting Service is considering current estimates on an area basis, but not until the list of commercial growers is complete.

A bulletin on Illinois fruit and vegetable production and marketing is nearing completion and will serve as a marketing guide for both producers and buyers on areas of production of each commodity and when they will be available for market, and also will serve as a base book for current reports on both vegetables and fruits.

Although the fruit and vegetable industry in Illinois is a minor one compared with corn, hogs, and soybeans, it has major marketing problems. The new basic data being developed under the matching fund project are used by market analysts in forecasting the amounts of each variety available by dates and what competition these will have from other areas, in measuring trends in both population and production on a variety basis, and in the acceptance and adoption of recommended new varieties and changes in the proportions marketed by different methods. The basic data also provide the Crop Reporting Service with an up-to-date base for estimating current production.

HOW NEW FRUIT AND VEGETABLE DATA BEING DEVELOPED IN MICHIGAN ARE BEING USED

C. J. Borum
Michigan Crop Reporting Service

Michigan has five fruit and vegetable projects being conducted under matching funds:

1. Developing objective methods for estimating
    (a) Sour cherry production.
    (b) Onion production by areas. (Both of these are cash crops which are subject to considerable bias.)

2. Issuing weekly reports to Michigan onion growers on progress of the Texas early spring onion crop; January-March, inclusive.
3. August 1 estimates of apple production for principal varieties.
4. Estimates of changes in numbers of bearing fruit trees.

Objective Method of Estimating Sour Cherry Production

Michigan produces about half of the Nation's crop of sour cherries. About 95 percent of the Michigan crop is processed, canned, and frozen. Harvest begins during the first week of July, and processors usually begin to contract with wholesale grocers in late June for future delivery. Historically, a 10,000-ton change in the national supply results in a change of $5 per ton in price to growers. This would mean $350,000 on Michigan's average crop of 70,000 tons. For this reason, it is important that the first official production forecast (as of June 15) be subject to a minimum of sampling errors.

The Great Lakes Bargaining Association was organized 2 years ago. This is an organization of growers in the five eastern States which bargain pricewise with processors. The Bargaining Association is vitally interested in an accurate official production forecast, published about June 20. The association has been willing to contribute more funds for this project than the Agricultural Marketing Service has been able to match. Our local matching funds for this Agricultural Marketing Service project have thus come from two sources, the Michigan Department of Agriculture and the Great Lakes Bargaining Association.

Fruit counts are made as of mid-June, July 1, and August 1, on random samples of limbs, on random samples of trees, on a random sample of orchards. The counts are made by local, paid enumerators. The growth rate of the fruits is determined by frequent weighing of random samples. By mid-June, the cherries have reached about one-third of their final weight. We are working on the assumption that if we can estimate the number of cherries, the average harvest weight, and normal losses of fruits between mid-June and harvest, we can make a reliable estimate of production in mid-June. Our results to date are encouraging. However, our data indicate that fairly large samples of orchards may be required to reduce the sampling errors to an acceptable level. Weather conditions after mid-June are a big factor in determining the tonnage that is harvested. The uncertain weather factor limits the reliability of the cherry counting project.

Our public relations have been excellent. The field and other contacts we have made in this project have resulted in better acceptance of our entire estimating program. For example, the organized apple producers in our State would like for us to inaugurate a project for their fruit and stand ready to contribute funds for a similar project.

To date our cherry project has largely been devoted to developing methodology. It is not only necessary to develop a method that will do the job, but also a method that can be done by the type of field employees available and in the time available.

Area Estimates of Onion Production

Michigan is one of the leading onion-producing States, and there is pressure from the Onion Association to publish area production estimates. Three years ago we tried making some crate counts at harvest time, but found that method of estimating yields per acre obsolete, as most of the onions never are put in crates. Two years ago we started objective sampling at harvest time to determine yields in one county. From the Onion Association we obtained a list of all growers in that county and their acreages. We harvested 3-foot samples on every 10th acre. These 3-foot samples were laid out so that we could test the reliability of 3-, 6-, 9-, and 12-foot plats. This year we repeated the project in two counties, using only 3-foot plats and avoiding some of the mistakes we made the previous year. We still have not developed a good method to get all of the samples on one trip after the onions have stopped growing and before the fields are harvested, when they mature over a 4-week period. Such problems narrow the spread between costs and value of our projects. We believe that reliable area estimates could be made from objective field samples if sufficient samples were taken. Such indications would also improve the State estimates.

Onion Newsletters

The marketing of the Michigan onion crop from storage overlaps that of the early spring crop from Texas. Too much overlap results in dumping of storage onions, while a shortage can skyrocket prices. Thus, the Michigan grower needs information on the progress of the Texas crop in order to space his marketings. In response to annual requests from the Onion Association, we arrange with our Texas office to obtain their weekly crop-weather reports by airmail and with the local weather bureau office to obtain extra weather data from Texas stations. These are issued in a special report from our office each Friday, from mid-January through March. We have many out-of-State requests for these releases.

August Estimates of Apple Production by Varieties

Michigan's apple crop averages about 10 million bushels a year. Four varieties--Jonathan, McIntosh, Delicious, and Spies--make up about 70 percent of the total. However, the breakdown between these four varies considerably from year to year. The utilization and movement of these varieties differ considerably. For most efficient marketing, growers need to know the prospective production for each important variety. Prior to our issuing of the August report a few years ago, the first information available by varieties was the November storage report issued after half of the crop was sold. Many of the independent trucker-buyers have moved out of the market by that date. The August report gives the growers and industry a chance to plan their marketing for each variety when they still have time to make some adjustments.

Changes in Tree Numbers

If there is one factor that has characterized the fruit industry in recent years, it is change. This is especially true in Michigan, where we have had so many small growers and so many diversified operations. These changes are giving us a completely different fruit industry. Thus the interest in these changes is very high. One of the big changes occurring is in tree numbers. The demand for this information is not only from the growers and trade but also for our own office. For some of our fruits this change in tree numbers is one of the most important factors in estimating production trends and production.

In late April, we mail a special fruit tree questionnaire to our regular fruit reporters and all of those on our special apple, cherry, and grape lists. They report the number of bearing trees in their orchards for the current year and the previous year. From these indications, we estimate the change in the numbers of bearing trees for the State, the percentage change in the major producing districts, and the direction of change in the minor districts.

New Data Needed

We have three fruit projects in the thinking or pondering stage. None has reached the drawing board as far as Agricultural Marketing Act funds are concerned. One is the perennial request for information on tree numbers by age groups and varieties. We have released some information on cherries and peaches that was secured in cooperation with the Plant Industry Division at very low cost. Some of the eastern States have made complete enumerations of their commercial fruit growers to obtain this information. This is costly with only a few hundred growers. In Michigan, with all of our small commercial growers, we would have to contact 2 to 3 thousand growers just for apples and another thousand or more to include the other tree fruits and grapes.

The second project concerns the methods of marketing fruits, especially apples. We have complete enumerations covering the fruit going to processors, but we have practically no information on the fresh market segment. Even our estimates of total movement to the fresh markets are pretty much guesses. We have little information on the amounts or proportions going to the various fresh market outlets or marketed in the various containers.

The third project concerns our bramble fruits and blueberries. Michigan is a large producer of these, but practically the only information comes from the census taken every 5 years.

HOW NEW FRUIT AND VEGETABLE DATA BEING DEVELOPED IN NEW YORK ARE BEING USED

Wm. I. Bair
New York Crop Reporting Service

As we all recognize, the needs for new and improved fruit and vegetable production data are quite variable. What is needed in one area may not be as urgently needed in another. My comments, therefore, will briefly describe types of fruit and vegetable data being developed by the New York Crop Reporting Service under matching fund projects. The procedures used may not be appropriate for other areas, but were deemed most efficient for the accuracy of results desired and resources available for the projects. The five projects I will discuss have been recently completed or are now in various stages of progress in New York.

Potatoes

Rapid urbanization, together with changes in production and marketing technology, have brought marked changes in the potato industry on Long Island in recent years. As a result, local industry groups and marketing officials requested certain basic information which they felt was needed for developing a workable solution to the Long Island marketing problems.

In meetings with local growers and dealers, the desired information was voluminous, but, in general, could be restricted to: Potato acreage by varieties and by areas (township), irrigation facilities available, storage capacity, and extent of various harvesting and marketing methods used by growers.

With industry representatives emphasizing the need of having the basic information by small areas, in this case towns or townships, it seemed necessary to conduct a complete enumeration of the approximately 700 potato growers.

A down-the-road procedure was followed in central and eastern Long Island, where potato growing was most concentrated. In these areas, enumerators outlined on large-scale maps the potato fields, as enumerated, to avoid duplication of acreage and also to permit checking for possible omissions. On western Long Island, potato fields are widely scattered and frequently are located off the road or back of a housing development. In these areas, enumerators, well informed as to local conditions, were used to ferret out the potato growers. Potato inspectors, regularly employed by the New York State Department of Agriculture and Markets (Division of Markets), were utilized as enumerators. They received brief instructions regarding schedules and general procedure before beginning their work in May 1958.

A total of 670 farms planted over 49,000 acres of potatoes. More than 80 percent of the farms reported adequate irrigation facilities for their potato acreage. The least amount of irrigation facilities was on the south shore and the western townships of the island. About half the acreage was harvested with bulk handling of the crop, although only a third of the growers, obviously larger growers, were using this method. Historically, Long Island stored few potatoes, following the practice of marketing the crop after digging. However, a rapid expansion in storage facilities has taken place in recent years, and the survey indicated a farm storage capacity of nearly 5 million hundredweight, approximately equal to half the usual production. Two-thirds of the potatoes sold were delivered bulk to local dealers for grading and packing.

In 1959, a sample survey was conducted to ascertain planted acreage. From the list of growers, which was first arranged by size groups based on their previous year's acreage, a random sample was selected--every third grower. These growers were mailed acreage inquiries with a postcard reminder about a week after the original mailing. Half of the nonrespondents to the mail inquiry were then interviewed to obtain 1959 planting, thus providing a statistical basis of eliminating mail response bias in the final estimate. All large growers, over 200 acres, were mailed inquiries and all nonrespondents contacted.

Releases of both years' data were sent growers, dealers, newspapers, and extension and marketing officials. The results have been used within the industry to evaluate "where they are" and point up the areas for educational programs to result in a more orderly and efficient marketing of the Long Island crop.

Vegetables on Muckland

In New York vegetables on muckland immediately implies onions, and there is intense interest in onions by both growers and dealers. The operations are characterized by small fields intensively cropped (ranging from about 1 to 7 or 8 acres and a few 20-acre fields), and operators living in nearby villages, so the operator is not readily identified with his land. Also, each of the major areas is isolated, which results in continuing requests for onion acreage by local areas to minimize some of the "erratic stories" which otherwise develop.

Conventional survey methods of contacting muckland operators to ascertain their crop acreage have not been satisfactory, as fields are continually changing from one operator to another. Identity of fields with individual operators is almost impossible, and it is very time consuming to locate the operator. There is also a general reluctance to furnish acreage information, if and when the operator is found. Therefore, development of efficient and economical alternate methods for obtaining vegetable acreage on New York muckland was most desirable.

In New York we are capitalizing on the fact that the major and subdrainage ditches are not usually changed from year to year. Thus, maps have been prepared for each of the 4 major areas (which account for nearly nine-tenths of the New York onion crop), showing the acreage in each field. Drainage district maps with "surveyed" acreage were used when available. In other areas, it has been necessary to planimeter aerial photos for field acres. Prints of the master maps are taken to the field in the spring when onions can be identified. Each field is observed and the crop growing indicated on the field map. Care is needed in ascertaining if a ditch has been changed which will alter field acreages. Also, some field measuring is necessary to provide a basis of keeping the master maps up-to-date for newly cleared or drained muck.

The information recorded on the maps from the objective observations can be tabulated into total acreage of onions, lettuce, carrots, and other vegetables growing at the time of survey. In New York the time is selected after all onion acreage can be identified. Repeat visits would be necessary to get acreages for vegetables double cropped or planted late, and our resources as yet have not warranted this further use of this objective procedure. We have revisited areas when heavy abandonment of acreage due to crop failures occurred, thereby getting an accurate and quick measure of such loss.

This procedure has resulted in onion acreage information by areas which is accepted by industry and has led to improved area onion production and stocks estimates, which are basic to the industry to orderly movement of the crop during the harvest and storage season. Reports are prepared and sent for all interested individuals.

Fruit Trees

At the request of growers' organizations, processors, county agents, and marketing officials, a fruit tree survey was conducted last spring.

The procedure was "get by mail all possible, with interview of nonrespondents." Mail is, obviously, a most economical method of collecting data, and many orchardists can supply more accurate data when taking time to complete the inquiry form than when being pressed in an interview. After all, most growers do not have on the tip of their tongues details as to age and variety of their plantings, nor the production by varieties.

Lists of orchardists were compiled through the excellent cooperation of county agents and leading fruit growers. Publicity for the survey was given by county agents and grower organizations in their respective periodicals. Each grower was mailed an inquiry form in January 1959, followed in about 10 days by a second request. Nonrespondents were then interviewed for information on their operation. Inquiry forms were finally obtained from all growers having 100 or more apple, peach, cherry, pear, or plum and prune trees being sprayed, pruned, and so forth. Abandoned orchards were excluded and grapes were not covered. Substantially all growers were able to supply requested data on tree numbers, and about three-fourths supplied the desired production data, by varieties on apples and the total for other fruits. The reported production data were used as a sample, with stratification of orchards by area and size for estimating production in all commercial areas.

The results show a sharp reduction in plantings of Baldwins and Cortlands, long established in New York, and relatively heavy plantings of Delicious (red) and Golden Delicious. A report of the tree inventory by area, age, and variety is being prepared for all growers and other industry representatives to provide a basis for intelligent future plantings. The production data furnish a needed benchmark for official U. S. Department of Agriculture fruit estimates.

Grapes

Of interest to the grape industry is a postharvest survey of all processors to ascertain the tonnage of grapes acquired from each of the four major production areas of New York, as well as out-of-State sources, by varieties, and the primary utilization made of each variety. Price paid growers is also secured. Usual mail procedures are followed in securing the information from all processors, and they have given excellent cooperation. The results, made available to all interested individuals, provide a guide as to the current supply situation and a measure of production trends by areas, both considered valuable by processors and growers in planning current marketing programs for juice and in prospective planting programs. Over 95 percent of the New York grapes are processed by wine or juice plants--fresh sales are negligible for most growers.

Improving Apple Forecasts

This project was initiated in 1958 to develop and test methods of forecasting the New York apple crop by objective counts and measurements. Our research with objective procedures for apple forecasts, in simple terms, involves four distinct steps: (1) Estimating number of fruit early in the season, (2) predicting the droppage of fruit prior to harvest, (3) predicting the growth curve or harvest size of fruit from preharvest indications, and (4) converting the resultant information to a common denominator--for apples, bushels is the common unit used by the New York industry in expressing total production. This research, in cooperation with the Geneva Experiment Station, has been largely carried out in the Lake Ontario area, the largest apple-growing area of New York. Methods practical in that area undoubtedly would be appropriate for other apple areas of New York; thus, efficiency suggested limiting the exploratory study to one area.

Sample orchards were selected from a list of all apple growers, using statistical techniques which insure proportional representation of various geographic areas, varieties, and sizes of orchard. Within each orchard, sample trees were randomly selected, and for each tree a sample limb was randomly selected. Obviously, the sample limb represents a portion of the tree's total bearing area, and this proportion is reflected by measuring the cross sectional area of the sample limb and the total cross sectional area of all limbs. Fruit on the sample limbs is counted in time for the first desired forecast. The "limb count" is expanded to an indicated number for the tree, using the relation of the limb's cross sectional area to the total cross sectional area for the tree. Thus, "limb counts" from a number of trees provide an estimated number of fruit per tree. Numbers are quite variable from tree to tree and orchard to orchard, so counts will be needed in several hundred orchards to provide a reliable average number of fruit per tree for forecasting purposes.

To get measures of droppage, we tagged some of the fruit on the sample limbs when making the limb counts. Thus, in subsequent visits to the orchard a check for missing tags provides a measure of fruit disappearance. In 1958, disappearance from late July until near harvest averaged about 13 percent. How uniform this runs from year to year is unknown, as there is little recorded information in apple literature on this subject.

Early-season size measurements of a number of fruit are made on the sample limbs. Actually, the fruit tagged to reflect disappearance was measured and remeasured at subsequent periods during the growing season. This permits establishing "the growth pattern" for the season. Again, testing is necessary to determine whether apples grown under New York conditions develop at about the same relative rate during the later part of each season. At present we are relating stage of development during the season to days from bloom. Is another measure such as heat units better? We don't know, except to observe that the time to maturity was not greatly less in 1959 than in 1958, while temperatures in 1959 were substantially higher.

Converting the predicted number of apples and size of apples to bushels requires some basic knowledge which is conspicuously lacking. To provide data in this regard, we graded apples to specified sizes and obtained counts of the apples, in common size ranges, in a bushel. For example, Baldwins of 3 to 3¼ inches run slightly over 100 apples per bushel, while, with 2½-2 3/4-inch Baldwins, counts run about 165 per bushel. Thus, even with a given number of apples and size, there are some little problems of forecasting the volume of production.

Conclusion

These five projects illustrate types of basic production data to assist the fruit and vegetable industry being developed in New York under matching fund projects. Some of the additional data needs can be met with adequate resources, while others require resources to develop the methodology for collecting desired data in an improved manner. In any case, it is essential to recognize that improved statistical information requires resources, including capable personnel. Also, full cooperation of all persons who will be solicited for the primary information is a necessity. Automation, the talk of the times, can expedite the analysis of statistical data but does not resolve the problem of getting the many basic bits of data for use in the analysis.

HOW NEW FRUIT AND VEGETABLE DATA BEING DEVELOPED IN CALIFORNIA ARE BEING USED

Robert D. Parr
California Crop Reporting Service

This discussion will be limited to the fruit and nut crop estimating program conducted in California. I will briefly review the estimating work, the need for improved forecasts, a description of methods being tested to improve estimates, the organization of these special programs, and last, some of the factors found most useful and some results.

California Fruit and Nut Crops

The fruit and nut estimating work in California covers some 20 crops whose total value exceeds $540 million annually. Many of the crops are not grown in other States. Comparison to U. S. production by crops shows that the fruit and nut crops in this group that represent more than 90 percent of the U. S. production are: Almonds, olives, nectarines, pomegranates, figs, lemons, dried prunes, dates, persimmons, walnuts, avocados, and grapes. Plums and apricots amount to roughly 80 to 90 percent of the total. Pears and peaches fall in the 45 to 50 percent class, while crops with less than a fourth of the U. S. production are: Oranges, cherries, apples, and grapefruit. A unique feature of this group of crops is the fact that all the crops named are ones for which very accurate figures of final production are available through various sources. A performance record of early-season forecasts of such crops can be readily compiled for all to see. The brutal facts of one's forecasting abilities stand out prominently.

Users of crop forecasts can and do express in many ways an intense and ever-increasing demand for accurate and timely forecasts of production.

It is easily recognized that in order to provide for orderly, efficient, and equitable marketing patterns and to assist growers to obtain reasonable prices for their crops, it is imperative that accurate forecasts of production be available prior to and during any current marketing season. For those crops having alternative uses, such as grapes, peaches, and pears, there is an even greater need for accurate and timely estimates of total production.

Designed to achieve best use and value to all concerned, there are a number of industry self-help programs for some California crops, administered by State and Federal marketing order groups. Some of the State orders are set up to provide ways and means for industrywide promotion of sales, the cost of which is governed by assessments collected relative to crop size. Some of the State programs and the Federal orders provide means to adjust supplies to market demands by limiting either quantities marketed or by creation of surplus pools for other than domestic disposal, so that growers, handlers, processors, and consumers benefit equally well. The expressed need for accurate forecasts for these crops is consequently as acute as the need to establish marketing policies, especially in crop years when surpluses exist. Decisions relative to surplus controls must be made with adequate knowledge of supply and demand. Without such knowledge, or with inaccurate information, the wisdom of decisions or the ability of these groups to regulate domestic supply with any precision is considerably weakened.

The Crop Reporting Service publishes crop forecasts each month during the growing season. These forecasts are based primarily upon growers' reports of condition of crop in their locality as a percent of full crop. Average condition is then transformed into a forecast of production by correlating condition and tonnages for a series of years. Adjustments are applied for trends in yields and acreage changes.

Crop forecasts have, over the years, provided adequate results. In recent years, however, more precision has become necessary. Forecasts for most crops are close to actual, but in occasional years growing condition does not reflect the true condition.

In an attempt to test some refinements of our forecasts, the collection of objective measurement data for certain crops was started in California in 1951. Assumptions made were that the factors associated with final production, such as fruit count and weight of fruit, are directly related to tonnages produced. Stated another way, at harvest the number of acres or trees growing a crop, times the number of fruit set, times weight of fruit should equal production. The determination of these factors at harvest is a matter of counting and measuring. By proper sampling methods, fairly accurate estimates can be obtained. Where the problem becomes particularly difficult is in moving the time for such estimates from harvest to some date shortly after bloom. This involves forecasting growth and even the number of fruit that will remain on tree to harvest. With this in mind, a statistically sound sampling procedure was designed to provide estimates of fruit counts early in the season. Size of fruit at known biological reference dates were used as an indication of final weight.

How Projects Are Organized

The projects and their starting date that have been studied in detail on a full field test basis are: Raisins, 1949; clingstone peaches, 1952; Bartlett pears, 1952; grapes, 1956; lemons, 1958; and walnuts, 1958. These crops are grown on about 743,000 acres, with a total production of 4,600,000 tons and a total value of $361 million, or about two-thirds of the total value of all fruits and nuts grown in California. The projects were organized primarily to study the use of objective measurement techniques for forecasting production, with the exception of raisins. The raisin survey was designed to provide an early end-of-season estimate of total production, to study the problem of estimating grower intentions to make raisins, and to make within-season reports of raisins laid to date. Generally, all of the projects followed the same pattern of first deciding what type of sampling would be necessary, the design of a sample, selection of sample units, organization and training of a field force, conduct of field survey, and tabulation and analysis of results. Financing of the work was carried on in a variety of ways.

Several of the projects were started as pilot studies with industry money and were later brought in as matched fund projects. In all cases the industry group participating is either a State or Federal marketing order committee. The monies spent in these projects since their inception total about $520,000, of which the State and industry groups cooperating contributed two-thirds.

Periodic acreage surveys of fruits and nuts planted, by counties, listing varieties and ages, have been conducted for a long series of years. These data are vital not only to the planning and conduct of the forecast surveys, but in providing much needed information relative to fruit and nut acreage. Without these data, yield studies would be seriously hampered. There is an ever-increasing need in this program to provide adequate coverage in all major producing areas each year.

Techniques and Methods Found to be Most Effective

In general, all the projects have been conducted in much the same manner, in that the various factors relating to final production were studied in detail. The variables tested are:

1. Can an estimate of fruit set be accurately determined from a small sample of trees or parts of trees?
2. Can size of fruit counted at a given time be used to forecast final size or weight?
3. The study of factors affecting measurable variables early in the season and final harvest weights, such as fruit loss.

The problem of maintaining the optimum sample scheme by crops is one of designing a plan that has the proper number of orchards, trees within orchard, and parts of a tree that will provide unbiased estimates of set with a minimum variance for the money to be spent.

Problems were encountered in estimating fruit set, such as the optimum size of the counting units. It was found, for instance, that there is a larger variance in counts from tree to tree between orchards than between trees within orchards. Consequently, errors due to sampling could best be reduced by increasing the sample number of orchards. Tests are under way now to incorporate a procedure of counting fruit set along a particular path in a sample tree by selecting parts proportional to their size, as suggested by Jensen and Kelly. Some operational problems are encountered, especially in 50-foot walnut trees and dense, bushy lemon trees. Another problem that has not been solved completely is that of the relationship of fruit sizes as of a given time to final harvest size and weight of fruit. We find the fruiting habit of lemons is such that bloom and fruit harvest occur over a 13-month period. The time required for a lemon bud to reach picking size is from 6 to 8 months. Thus fruit counts as of any one time will not account for all the fruit to be harvested for a given crop year. The problem now is to test a procedure for predicting lemons potentially available for picking. The harvesting practice is to pick lemons as of a given size rather than at maturity. Dependent upon market demand and fruit maturity, some fruit is stored up to 6 months.

There are often many useful types of supplemental information that come out of such surveys. For example, it was found in walnuts the nut shell reaches full size and hardens completely about 2½ months prior to harvest. This is useful in providing a basis for estimating size and grade composition. Such data can, in certain crop years, be as important, if not more so, than the actual production estimate itself.

Some Results

The projects listed have been conducted with varying degrees of success in terms of accurate forecasts of production. The Bartlett pear program after 7 years was discontinued with the 1958 season because of problems in financing, before all the problems of forecasting were solved, but some positive progress has been made. Pears set per tree by areas, fruit size, and growth rates were obtained. Growth patterns after count and size determination need further study.

Important strides in the peach forecasting work have been made. Financing of this project has been shifted from a matched fund basis to a completely State-Federal project starting July 1959. Fruit set and size estimates are obtained readily; however, with pears, factors relating to sizing of fruit after reference date and disappearance of fruit set after reference date need further study.

The work on raisin grapes, which is now financed completely by industry, is primarily concerned with estimates of total raisin production at the close of the harvest season. This estimate is used by the Federal marketing order committee as the base tonnage figure for determining free, reserve, and surplus tonnages, and consequent restrictions on disposal. This survey has been developed to the point that adequate results are obtained by probability sampling of a known universe of raisin-type grape growers. Some objective measurement data on tray counts and weights are collected to supplement grower reports. These data provide a basis for making estimates of acreages harvested for raisins, trays laid per acre, weight per tray, and moisture content of raisins on trays, with comparisons to previous years.

The grape project is still under test. We have just completed the fourth year, and some of the problems that require further study are: (1) Definition of grape bunches and accurate determination of average bunch weight, (2) bunch density, and (3) drying ratio for raisins.

The second year's work on the walnut project has been completed. The first experimental forecast was considered by the Crop Reporting Board in preparing the September forecast. Supplemental information on the size and grade composition by areas and by varieties was presented to the Walnut Control Board, a Federal marketing order group, in September. Data of this type can prove useful to the industry in developing marketing plans.

The lemon survey, started last January, has been designed at the present time to forecast crop tonnage potentially available for picking 2, 4, and 8 months hence. Within-season sample surveys are to be made in October and February, with intermediate surveys at 2-month intervals. The surveys thus far have provided indications of sizes, grade, and color or degree of maturity of lemons on-tree as of particular survey dates. Projections of fruit available will be made, based upon the relationship of the index of fruit count times size, and picks to date.

Some discussions for other objective measurement projects have been held with other industry groups and some informal work is under way with the date industry.

While many problems exist relative in forecasting agricultural production accurately by use of objective measurement techniques, the need for such data and measures of reliability of forecasts, plus the supplemental information that can be obtained, is of great concern to users.

If such forecasting techniques lead to improved results, the role of the Crop Reporting Service is clear.

IMPROVING OUR MARKET NEWS SERVICES

Fred S. Nightingale
AMS, U. S. Department of Agriculture

Basically our problems in market news, where improvements can be made in the foreseeable future, are confined to three major items.

I would list as the most important of our unfinished work the 38 Cities Truck and Rail Receipts report; second, increased f.o.b. reporting to round out the national shipping-point reporting picture; and third, improved cooperative efforts for greater efficiency through mutual agreement. There is a fourth--money, which is necessary to do what we know ought to be done. On this point, let's just admit we are a group of paupers, and keep our talk at a level where we can accomplish the work under our present or foreseeable fund limitations.

The 38 Cities Truck and Rail Unload Report, or Consolidated Report, is considered to be the best possible solution to improving the supply picture of fruits and vegetables. We look on this as "our problem," since it is a national report. This report is issued each morning and shows the fruits and vegetables unloaded in 38 markets, by State of origin and commodity. This report came into being after considerable thought and review. Fifteen to 20 years ago this report was not necessary, as we had a fairly complete supply picture through our rail reports. However, after World War II, trucks began hauling much more tonnage and made the rail figures we obtain less meaningful. Now we know the way this information should be presented to the industry. It should be patterned after the shipment releases, showing commodities by State of origin.

Unfortunately, after much thought and research, this type of truck reporting proved impractical and uneconomical. This was when the present 38 Cities Report was started as a solution, to give the industry a more complete supply picture.

It started out with 20 cities 5 years ago, was expanded to 40 cities, and is presently at 38 cities. We believe that this number of cities should be between 60 and 75 and hope to have it at that figure as funds become available. As we gained experience in working with this report, we have improved the format and also its timeliness. It is now released with about the same time lag as the Dairy Carlot Shipments. We believe, and here I emphasize believe, that the present report represents about 60 percent of the total movement.

Collection of these data basically is our problem, but your help is needed in getting the information disseminated to the industry in the best possible manner. We release this report over the teletype around 9 o'clock each morning and the information is broken down by commodity, State of origin, and whether movement was by rail or truck.

The need for increased f.o.b. reporting is quite obvious. In our work, we have found this to be the area where the most industry interest lies. During the past year we have added Maryland auctions of fruits and vegetables; New Jersey apples, asparagus, and miscellaneous crops; San Luis Valley lettuce; Delaware potatoes and apples; Texas citrus; California citrus; Klamath Falls potatoes; and Blythe lettuce and cantaloups; and have expanded the operational dates of many of our seasonal offices. This work was carried out mostly by present personnel and with the fine cooperation of the States mentioned.

We all know the reasons for increased interest in the f.o.b. reporting. Terminal markets are becoming less of a factor as "price makers" since many large buyers are going directly to the shipping-point areas and are buying "straight" or "mixed loads." So it is becoming increasingly important that competitive shipping-point areas have a free flow of information. We do not mean to infer here that the terminal markets are becoming extinct. We do not go along with the theory that they are dead and are ready for burial. If this were the case, the many fine new terminal markets would not have been built, such as those at Columbia, Birmingham, Atlanta, and, most recently, Philadelphia. However, more of this type of reporting--f.o.b. reporting--is needed. We in the Federal Department cannot do it alone. All of the accomplishments of the past year have been joint efforts on the part of the States and the Federal Government.

Let me digress for a moment to say that one of our problem areas is communications. We are constantly trying to speed up our exchange of market information over the leased wire. As most of you know, we have over 13,000 miles of leased wire for the exchange of market information. Our ideal--our goal--is to have all market information moved by noon each day. As I say, this is an ideal and something to work toward. We are constantly checking our wire service, and improvements are being made right along. Our main efforts have been to get the basic information out and exchanged at a time when it is most useful.

Now, for our third point--cooperative agreements. We have cooperative agreements with most of the States to carry on our market news work. Without these agreements and the financial participation of the States in the market news work in their respective areas, it would be impossible to render the service we are now giving.

The attached map shows the comparative amounts being spent by the States for all market news coverage. These expenditures include not only fruits and vegetables, but also dairy, poultry, grain, and livestock.

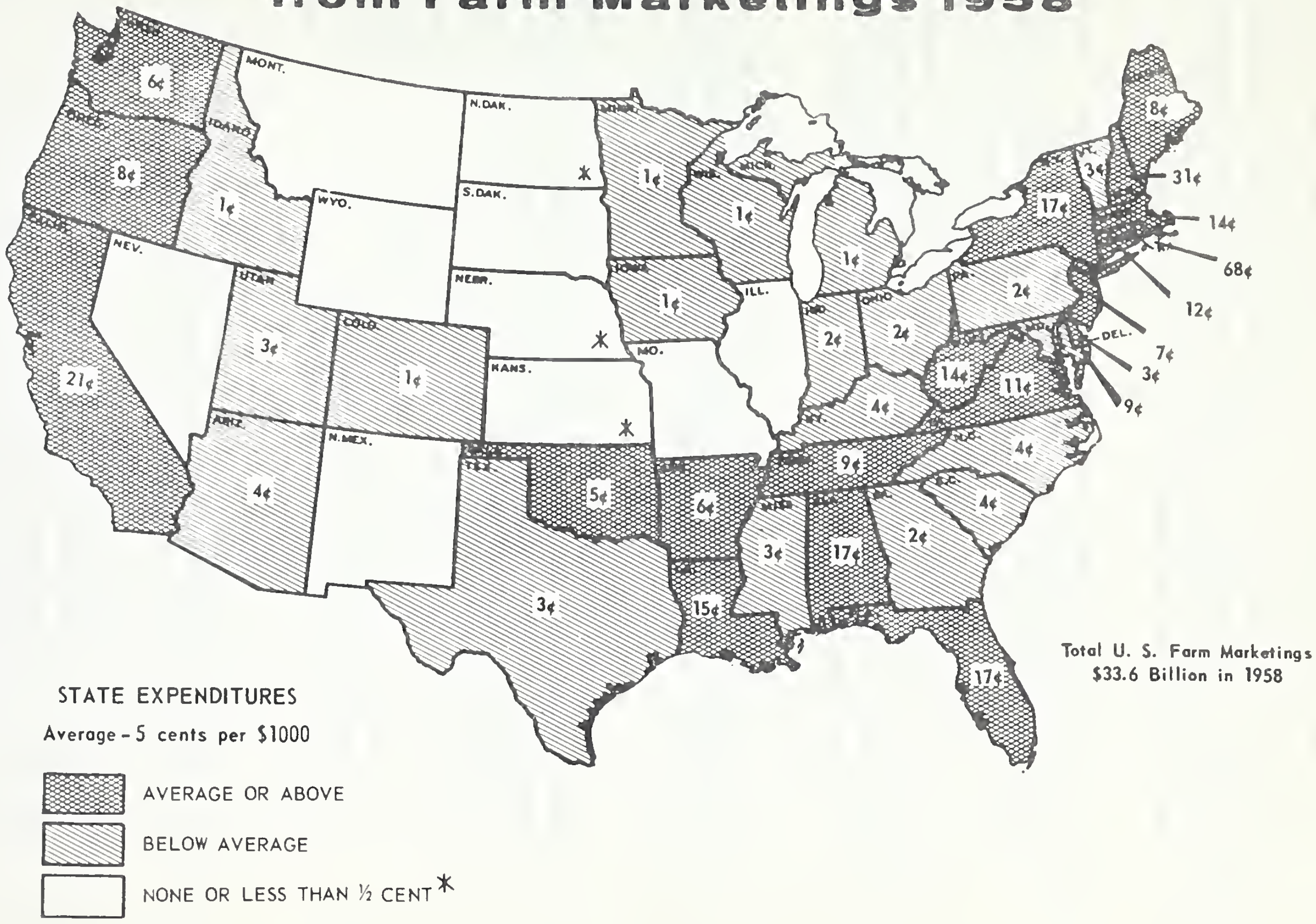
Since 1950, basically our agreements have been established along fairly definite lines. These lines have been established as areas of responsibilities. There are three basic areas in which the financing falls. The first area comprises marketing areas of national significance. Examples of this type of news work are carlot shipment reports, unload reports, 38-cities reports, and reports on major terminal fruit and vegetable markets. The second area consists of data of less than national significance, but of interest to parties both within the State and out-of-State, and needed for national dissemination. This is usually where the Federal and State governments both participate and have a joint responsibility. Most shipping-point offices fall into this category. The third area is where the information is purely of local interest and is collected and published locally. This is considered a State responsibility.

To summarize the areas where we feel our Fruit and Vegetable Market News could be improved--first, we need to broaden the reporting base for our 38-cities report. This is to keep up with the shift from rail to truck transportation that is still going on.

Second, to keep up with the changing production areas and new crops being grown in older areas, we must carefully review our reporting practices and be prepared to make changes where growing and marketing conditions dictate.

Finally, we'd like to work more closely with the States to get the market reporting job done, and to make the industry's market news dollars go farther.

STATE EXPENDITURES FOR MARKET NEWS (F. Y. 58)
In Cents per $1,000 in Cash Receipts from Farm Marketings 1958



U.S. DEPARTMENT OF AGRICULTURE

NEG. 7456-59 (9) AGRICULTURAL MARKETING SERVICE

HOW THE NEW JERSEY COUNTRY-POINT PRICE REPORTING SERVICE IS IMPROVING MARKETING

Vinton N. Thompson, New Jersey Department of Agriculture

Before approaching the subject of the country-point price reporting service in New Jersey, probably more background information would be appropriate as to the methods of marketing and the pricing system that were appropriate in the earlier days. In early colonial days, practically all of the sales were made by the producer direct to the consumer, and the price obtained in many cases was obtained by direct bargaining.

Following this period, wagon loads or boatloads of produce were sent to the large towns and sold by the farmer or by the commission men. In this type of sale, the commission men became the pricing authority and the sale was made at the price which the consumer was willing to pay. The farmer did not know until he made his next delivery and received payment just what his produce had brought. In later years, as the terminal markets increased in size, the number of commission men increased. Produce was not generally brought in by the farmer, but by a hired wagon, rail car, or a hired boat. Returns were made by mail, and in many instances commission merchants took advantage of the producer by taking more than his usual selling charge.

Two factors developed that influenced pricing as we know it. Commission men under the Perishable Agricultural Commodities Act were required to keep records from which the returns were made and which could be verified by Government employees as to the correctness of the returns to shippers.

The U. S. Department of Agriculture was also authorized by Congress to set up a Market News Service and to disseminate this information by mail and through reports to newspapers. The consignment business at this point increased greatly and aggressive commission houses had men in the field calling on farmers. These fieldmen encouraged farmers to ship to their firms. Because records had to be kept and because of the strict enforcement of the portion of the law which required accurate returns to growers, the law of supply and demand determined the price. The grower usually got his full return and price information in the next day or two. With the advent of the telephone and the extension of telephone service in the rural areas, it was possible to get price information the same day.

Buyers who could be called speculators during this period were buying direct from the farms. The grower had to depend on the buyer for price information, which in many cases was inaccurate and misleading.

The commission men reporting to the U. S. Department of Agriculture market news reporters tended to undervalue produce which they sold so that reports would show lower prices than those obtained. This gave an opportunity for the commission house to show a higher return to the growers than the quoted price. This led the farmer to believe that the firm was doing an excellent selling job for him and encouraged him to continue to patronize the firm. Market news reporters state they are still having a problem getting correct quotations and continually have to check the reported prices with other sources.

In the early 1930's, in New Jersey, numerous country shipping-point farmer-owned and-operated auction markets were organized. Here producers assembled their produce and submitted it for sale by auction. Buyers at these markets who bid for the produce on the basis of quality had their own ideas as to what this merchandise would bring in the market. As the chain stores developed, many of these country buyers became buying brokers for these retailers.

As the auction reports were analyzed and compared with terminal market quotations on consigned business, it became readily apparent that prices were generally higher at the country auction markets than they were at the terminal market. In some cases, this was because the merchandise was better packed, had better quality, and the local buyer had a market for it. Price also may have been higher because the buyers were bidding against each other for each grower's lot. In some cases, this may have been a false market price influenced by the fact that the grower owed the buyer for seed and fertilizer and this was an opportunity to collect.

Market managers compared prices with other markets to see how their values compared with those obtained at other markets. Buyers had certain advantages at the markets because they were constantly in touch with terminal markets and receivers and thus able to obtain the latest price information by phone.

Prior to World War II, a teletype system was installed at each country auction market and at the New Jersey Department of Agriculture. Reports received from the New York terminal and the Philadelphia terminal markets were relayed by teletype to the markets. The markets also had an opportunity to get quotations from each other at any time on the day's business. At the start of World War II, this service was discontinued as the teletype machines were needed for the armed forces. No f.o.b. reporting service had been installed at this time. Information on terminal market prices was available to producers through early-morning radio farm programs and mailed reports which were usually received too late for pricing requirements. The early-morning radio broadcasts did much to stabilize local New Jersey farm prices. These programs have since been reduced in number and in quality of information and have become less of a factor in determining local commodity values.

This was partly a result of the exceptional growth of chainstore retailing business and the fact that less of the desirable quality of produce was being shipped to the terminal markets. Prices, therefore, were made more at the country level and were less influenced by the terminal market quotations. Spot checks of prices paid to growers for comparable quality showed a difference of as much as 75 cents per container. Local buyers started to complain that the terminal prices were not prices which represented values at the country level. Receivers were continually attempting to pay for produce bought from country shippers at shipping point on the basis of the generally poorer quality that was sold in the terminal market and that as a result, brought much lower prices.

At the request of an organized group of local shippers, a trial f.o.b. reporting service was developed for the sale of sweetpotatoes. This service was performed by the U. S. Department of Agriculture Market News Service in Philadelphia. At the start, quotations on desirable lots of sweetpotatoes varied as much as 65 cents a bushel. As the information on the reports was disseminated by newspaper and direct mail through the facilities of the

U. S. Department of Agriculture Market News Service, this price spread was reduced to 15 or 20 cents. In addition, the service proved of value to shippers by rapidly reporting changes in market tone and the upward trends of value that year. The sweetpotato f.o.b. reporting service during the trial period was well received by producers and in turn by receivers. Shipper-receiver controversy over value practically disappeared.

The following year, a request was made to the New Jersey Department of Agriculture to develop a comprehensive f.o.b. reporting service on fruits and vegetables shipped in tractor-trailer-lot quantity and involving approximately a dozen major commodities. A request was made to the U. S. Department of Agriculture to prepare an agreement between the New Jersey Department of Agriculture and the U. S. Department of Agriculture as to obligations and duties of each agency.

A start was made during the asparagus season in 1958, using personnel already in the Department. Within a few months, a market reporter was employed and specially trained in the U. S. Department of Agriculture market news offices in Philadelphia. Following this, he was brought to the Trenton office and worked directly under the supervision of the market news chief. The Trenton office was hooked on to the U. S. Department of Agriculture teletype market news service eastern circuit. The information obtained on the New Jersey f.o.b. market was placed on the wire where it was made available to all fruit and vegetable offices daily. Information obtained from the U. S. Department of Agriculture Market News Service was used as reports to the local shippers on trends and market conditions in the various terminal and shipping markets. This created good will between the State market news office and country shippers.

In addition to the U. S. Department of Agriculture dissemination of New Jersey f.o.b. information over the leased wire system and through mailed reports by the Philadelphia U. S. Department of Agriculture market news office, special wires were filed with the AP and UPI Wire services. These reports, in narrative, were placed on the news service wires by 3 p.m. and were reported in the local evening papers and by the local radio stations in the producing areas. In two cases, local radio stations gave price information at their 3:30 p.m., 5-minute news break, which was about as rapid as this information can be broadcast to producers. This was only a 30-minute time lag.

Producers and shippers alike approved of the service, and it has done a great deal toward stabilizing market prices at the grower-shipper level.

Shippers are called daily for price reports and market conditions. These have generally been reliable. Probably the reasons for being truthful are more important at our New Jersey shipping points than they are at the terminal level. We are part of a great metropolitan area and many chainstore buyers' offices are within 100 miles of New Jersey producing areas. If the quotations are lower than the actual price, the buyers want to know why they can't buy at the quoted price. If the f.o.b. quotations are too high, the farmer wants to know why he doesn't get more. This acts as an automatic adjustment to correct misquotations.

Practically all shippers purchase at least part of their requirements at the New Jersey country auction markets. From one-half to three-quarters of these purchases are what we loosely term chainstore quality. This is a quality that the shipper feels reasonably certain the buyer will accept and not return to him. A comparison of the f.o.b. price reported by shippers and the weighted average price at the auction markets has been made. The comparison indicates that the weighted average price plus about 20 cents per package will fall within the range of the f.o.b. quotations.

Incidentally, country shippers buy practically all the produce that is sold at the auctions. The amount that is purchased and is not sold goes to a commission merchant in the terminal markets. Nearly all of this is not chainstore quality, so you can see why the f.o.b. price is and should be much higher than the terminal quotations.

The egg industry has requested the department to develop f.o.b. or country price reports for eggs. Two attempts have been made in the past year to develop such a service, but the results have not been too satisfactory. One of the reasons has been the lack of personnel to devote full time to egg price reporting and to make the necessary contacts that would make the representative price report available.

This is the next project in market news work in New Jersey, and we hope to have it under way shortly.

We have found that very close liaison with the U. S. Department of Agriculture is desirable for training and for the exchange of information. U. S. Department of Agriculture terminology is used in all instances, so that qualities and trend determinations or market conditions are understood by all offices.

We believe, and I think you will agree, that the producer not informed as to price and market conditions becomes a competitive liability to the true value of the product. He prevents his neighbors often from obtaining a fair market price. It is our goal to give all producers and shippers accurate shipping-point prices.

TRENDS IN PRODUCE PACKAGING

M. A. Ellison, Super Valu Stores, Inc.

Trends in produce packaging presents a topic that includes several phases of our business: First, the trend for overall acceptance of packaged produce by the consuming public; second, the materials and methods used in packaging; third,the changing trends in the point where the packaging is done. There are other phases, but I think the above three are of prime importance and represent the most burning issues of today. I would like to discuss these from the wholesaling and retailing point of view. We in the produce industry must strive to bring our segment of the food business abreast of the jet age. Although we have been lagging in the past, indications are now that substantial progress will be made in the future to move abreast or ahead of the rest of the food industry.

The produce industry today is fairly well split on the acceptance of prepackaged produce. The Northeastern and North Central sections of our country are probably the heaviest in packaged produce, with the retail stores approximating the 100-percent figure. Other sections use various commodities in packaged form, and still others practically none at all. The latter two groups seem to be gradually adopting it, mostly through the use of some bagged items. This trend will probably increase, at least on some of the major commodities, such as potatoes, citrus, apples, and onions, These items are generally acceptable to the consumer, with little educational problem. After confidence in this type of pack is established, the logical progression is into other types of packaged merchandise, such as overwrapped trays, sleeve pack, and full overwrapped commodities. One of the main reasons why the trend toward more packaging will continue and perhaps accelerate is the labor costs at the retail level. Labor contracts for retail personnel which have been written in the past year make it imperative that fullest use be made of production methods in the supermarket. Items that need to be packaged at the retail level can be packaged on a more efficient production basis. The basic consideration will be the reduction of costs at the retail store, and in my opinion, the prepackaging method is the best solution. From the retailer's point of view, this method of merchandising offers some very real opportunities. The consumer, too,realizes a number of advantages, such as cleanliness, selected quality, product protection, and a readily identifiable unit, and probably most important to the consumer's point of view--rapid selection. In a recent survey of some 3,000 women who were asked what they wanted of a supermarket, over 50 percent stressed that fast shopping was first in importance. Certainly, packaged merchandise fits into this consumer demand. Ease and speed of shopping have been partially responsible for the acceptance in meat and other departments of the supermarket. It seems only a matter of time before produce will be accepted in the same manner.

The second part of our discussion of trends might be in the materials and methods used in prepackaging produce. Although we do not have a crystal ball to give us the necessary information about the future, the evidence seems to indicate that we are only on the threshhold of many new developments in materials. The new polymer-coated cellophane is a marked advance in the cellophane field for produce. The polypropane and polystyrene or oriented styrene types of material in the plastic fields offer a good, rigid, yet flexible material with good visibility. This factor, which allows the consumer to make a good inspection of the packages, is of prime importance if we are to properly promote the cause of prepackaged produce. The use of other materials which will fit into convenience packaging, such as the polyvinyl material where items may be cooked in the package, may increase for some commodities. Dupont's new extruded polyethylene netting certainly shows promise, and I am equally certain that new, unheard-of materials will likely be presented and be acceptable for packaging.

Along with the new materials will come better design and color arrangements for the package itself. This phase of product identification is really in its infancy and certainly will progress and improve as packaging in the fresh field takes a firmer hold.

The third trend in packaging revolves around the "point" where the packaging will occur. This subject has caused a lot of controversy in the past few years and probably is a result of confusion as well as the attitude of "let Joe do it." Certainly letting "Joe" pay the cost of experimenting is less costly, but does not always produce the desired results. There has been a clearer picture emerging in the past year, however, and this trend can significantly step up the conversion to prepackaged produce. Before we get to this point, let us take a look at how the produce packaging business started and bring it up to the present time.

Using Super Valu Stores as an example, and I think it is somewhat typical, we can trace this evolution. Our organization started in earnest in promoting packaged produce in 1950, after conducting tests in 10 stores and then in an additional 10 stores to determine its consumer acceptance and the various advantages it had to offer. All merchandise was packaged at the retail store with the exception of a very few shipper packs, notably carrots. We were so encouraged with the results in these 20 stores that we embarked on a sales plan to sell all of our 600 independently-owned stores on this program. This has been accomplished with few exceptions. At that time, we felt we could have better quality control if the packaging was done at the retail store, so we could effect a very rapid turnover of the merchandise. This still continues to be of prime importance. We found out, however, that during peak sales periods the displays were not always adequate because of a serious labor problem. This was particularly true on the high tonnage and volume items. Gradually, we came to the realization that many items could be packed at the warehouse or shipper level with no more deterioration of product than would be the case if the store bought and packaged its own merchandise. As these stores prospered and space became a problem, it became more evident that merchandise shipped to the stores ready for immediate display could help alleviate this problem.

At this point, we started to pack at the warehouse those items that could be placed in polyethylene bags. These were the high-volume tonnage items such as potatoes, apples, citrus, and onions. This has worked out quite successfully, and by January 1 all of our division will be performing this operation.

The next problem to confront us was how to continually do this job more economically in order to be more competitive. Costs had to be cut at all corners. The most efficient equipment for our purpose was bought and labor saving devices installed. The area of shipping containers was studied, and it became very evident that large economies could be effected in this area. With the help of Paul Shaffer of the U. S. Department of Agriculture, we set to work on the bulk shipment of various commodities in pallet bins. We feel that the 48' x 40' pallet is the size to use for the containers, as this is one of the two sizes set up for the food industry some time ago by the Bureau of Standards. There are also a number of large receivers such as Steinbergs, Red Owl, Winn Dixie, and ourselves, to name a few, that have drive-through pallet racks in their warehouses to utilize this size of pallet.

The bin should be within the outside dimensions of the pallet and not over 5 feet from the floor level, including the pallet. We visualize that the height of such shipping bins, however, will be only about half this height. The dimensions of these pallets and bins is such that either rail or truck shipments can be utilized to good advantage. This method of shipping may well presage a new trend in packaging toward the warehousing or terminal packaging level. We are now set up at one division and soon will be in a second one to handle pallet bins of bulk merchandise.

We feel that this will be the most economical way yet devised to handle these products. Estimated savings on apples, for instance, when using a pallet bin shipping method, over the equivalent shipment of 18-40-pound cartons of apples, would be approximately 3.8 cents per 4-pound bag. The savings would be somewhat less on a commodity such as potatoes, and somewhere between these two extremes would be citrus items. This merchandise, when packed at the warehouse level, would be shipped to the retailer in rigid, returnable boxes at an estimated cost of 7 cents per trip. The master container we selected for shipment of bagged merchandise is moulded fibreglass with design and dimensions developed for this purpose.

Packaging labor per production unit as well as other factors of cost, is considerably less at warehouse level than at retail. Preliminary figures of all component parts of cost show that at the retail level it costs 5.68 cents per bag as compared to 3.31 cents per bag at the warehouse level. To show you what this means in a year's time--in a warehouse bagging 100,000 bags per week, the cost of bagging would be $172,100, compared to $295,400 if done at the retail level, or a saving of $123,300.

Another phase of warehouse-level packaging that is even more in its infancy than the bag type of container is tray packing. By this, I mean the packaging of apricots, apples, oranges, pears, peaches, nectarines, selected potatoes, grapefruit, and so forth, in 3,4,6, or 8 units to a tray, overwrapped with cellophane. Other loose items, such as grapes and cherries, can also be packaged in the same manner. We estimate ½ cent per package can be saved in packaging at the warehouse over the retail level. We also feel that a change in some of the packaging materials now under consideration can show substantial additional savings.

Bananas are another item which can be banded, weighed, and price marked more economically at the warehouse level if the whole operation is done at this point. Test figures indicate that the total cost of preparing bananas for sale at the retail level is 24.7 cents per 40-pound box. This same operation would cost only 17.3 cents per 40-pound box at the warehouse level. If a warehouse were processing 2,000 boxes per week, the saving in a year would be $7,696.

These items are the challenge for the near future. When these are successfully launched and operating, the last items to be prepared for the retailer will be parts of the vegetable line. We feel that by having a constant ready-for-sale product, the retail stores will increase sales by having products available at all times. Store labor can be reduced, uniform quality can be maintained, and quick flexibility can be achieved for retail units in a warehouse prebagging type of operation.

I do not mean to imply all packaging should be done at the warehouse level. Certainly the shipping point will be doing more in the future than ever before. The warehouse would supplement that supply with an aim to deliver to the retail outlet everything possible ready for sale. This trend toward helping the retailer get his merchandise ready for sale will undoubtedly hasten the conversion to packaging, if it is done in the proper manner, and in my opinion, increase sales of our fresh commodities.

Our aim, then, is to perform or have performed for the retail store all of the services necessary to place merchandise in the store ready for sale, and free the retailer of the necessary preparation work so he can concentrate on on his two basic functions--merchandising and promotion.

RESEARCH DEVELOPMENT IN THE USE OF PALLET BOXES FOR HANDLING AND STORING PRODUCE

Joseph F. Herrick, AMS, U. S. Department of Agriculture

When we say pallet boxes, just what are we talking about? At the present time there is considerable confusion regarding terminology. These containers are variously called bulk boxes, bulk bins, bin boxes, bin pallets, pallet bins, pallet containers, ton boxes, pallet crates, large boxes, tote boxes, palletainers, box-type pallets, box-type shipping containers, pallet-base boxes, and cargotainers.

For the purpose of this discussion we shall use the term pallet boxes, meaning containers which can hold 18 to 25 bushels of apples, one ton of potatoes, or a thousand pounds of citrus. They are generally rectangular in shape, and are capable of being picked up, set down, and transported by either clamp- or fork-type industrial trucks.

There is some small objection to using the term pallet boxes because some of the containers might not have pallets under them, but it appears now that most of them will have pallets. I feel that it would be very desirable to get industry to agree on, and adopt, a standard name for these containers, and whatever term is adopted it should indicate, or imply, that the container is portable.

Although large shipping containers were used in the late 1940's for experimental shipments of citrus from Florida to Ohio, the first significant use of pallet boxes for handling and storing produce in the United States came a little earlier. In 1944, studies were made in Colorado on their use with potatoes. Results of these studies indicated their promise. Use of the pallet-box method of handling is rapidly spreading in packing and storage houses for other agricultural products.

Since establishment of the Red River Valley Potato Research Center at East Grand Forks, Minn., the U. S. Department of Agriculture has included research on the use of pallet boxes for potatoes in its program. Tests with pallet boxes at the Center have included field filling, filling at the storage, storage studies, handling studies, evaluation of quality, and other factors, including design of the boxes and auxiliary equipment.

Pallet boxes perform quite satisfactorily for potatoes. However, they are better suited for some methods of operation than others. When using pallet boxes it is possible to reduce the structural strength of the storage and save somewhat on building costs, but these savings are not sufficient to pay the ownership costs of the boxes.

Less labor is needed to handle potatoes in pallet boxes, but, again, the costs of the boxes and equipment add to the total cost, so their use when compared with other methods of handling potatoes into and out of storage cannot be justified. Only if the turnover of the boxes is increased can the pallet boxes compete with other methods and equipment. This is true in potato processing when quite often, operations are geared so that the pallet boxes are in continual use. In operations such as this, the pallet boxes may be used as many as 25 times in one year, as compared with the one-time use of the pallet box at the regular storage and packinghouse. Therefore, since the ownership costs can be spread over a greater number of uses, an overall economy can be realized.

A number of designs for pallet boxes have been developed and tested at the Red River Valley Potato Research Center, and a report covering this work will be published.

Pallet boxes have been used for some years for almonds, walnuts, and other tree nuts. They also have been used for seeds. Citrus houses have made use of them for a considerable period, and their use in the citrus field is being further investigated. In Florida, cooperative arrangements have been developed for designing and testing the use of large pallet boxes for handling fresh citrus from the picker to the packing line and to determine their relative costs and efficiency for the handling and degreening of citrus. This work will be conducted by the Agricultural Marketing Service, in cooperation with the Agricultural Research Service, the Florida Agricultural Experiment Station, and a commercial citrus fruit packinghouse.

Adoption of the pallet box for handling and storing apples has been dynamic. In the United States, Michigan led the way in the shift to pallet boxes, with the Pacific Northwest following shortly thereafter. It is estimated that 40 percent of the 1959 commercial crop in this area will be handled and stored in pallet boxes.

During the 1952 harvest season, personnel of the Agricultural Research Service and Michigan State University cooperated with a Michigan grower in constructing six bulk boxes with end gates for handling McIntosh apples for the fresh fruit market. This work was expanded, and during the 1955 season approximately 10,000 bulk boxes were used to handle about 300,000 bushels of Michigan apples. During the 1955-56 season, U. S. Department of Agriculture research on bulk harvesting of apples in pallet boxes in the Pacific Northwest was started at the Tree Fruit Experiment Station, Wenatchee, Wash., in cooperation with the Washington Agricultural Experiment Station.

Research initiated by the Agricultural Marketing Service under contract during the fall of 1957, which covered the handling and storage of apples in pallet boxes at storage and packinghouses was completed last summer. Transportation studies are scheduled for the 1959-60 season and these, too, will be undertaken with a research contract.

Until recently, the Pacific Northwest to a large extent used as a picking and storage container the same standard wood box in which apples are shipped. Continued increases in the costs of this box, the use of new merchandising methods, and the adoption of improved technology for packing certain types of fiberboard containers have brought a marked shift away from wood boxes for shipping apples to market. This means that many plants faced heavy expenditures for picking and storage containers. They could use field boxes of the same size, standard boxes, or some other size of containers. It was assumed that a larger container was less expensive to use than the standard wood field box, and research on pallet boxes was undertaken to determine if the larger container might be better. If the pallet box proved better, it was necessary to determine the best size, design, and construction materials. Research on handling and storing apples shows that properly designed pallet boxes are superior on nearly all counts to the regular standard box.

The first year of AMS research was pointed toward the evaluation of the present stage of development of use of pallet boxes for handling and storing fruit and the potential of pallet boxes for these purposes. It was apparent that each person had his own idea of how the pallet box should be constructed; there were no guides available to the potential user to aid him in providing a properly designed pallet box.

During the first year, experimental boxes were designed and built, handling studies were made, structural strength and weaknesses of different designs were evaluated, the effect on the quality and bruising of the fruit was measured, the cooling rates were studied to determine the influence of design on how fruit cooled, labor and equipment costs were determined, an overall evaluation was made of existing pallet boxes, and, using the findings of the research, additional boxes were designed.

It was found that use of pallet boxes requires some special equipment at the orchard. However, at a storage and packinghouse already using pallets, the same industrial forklift truck used for handling palletloads of standard boxes can be used for handling the pallet boxes. The straddle trailer or straddle truck have found good application in transporting the pallet boxes from the orchard to the storage and packinghouse.

Tests showed that, generally, apples stores in pallet boxes cooled as well or better than those stored in standard boxes on pallets. Some pallet boxes, where the free space of the sides or bottom ranged from 8 to 11 percent, performed better than standard boxes stacked on pallets. Side spacing gave results comparable with bottom spacing.

Apples handled in pallet boxes had fewer bruises than apples in field boxes. Tests indicated that pallet boxes equipped with corrugated fiberboard liners bruised fewer apples than those not so equipped. If liners are not used, diagonally cut corner posts, eased edges of all inner surfaces of the boards, bullnosed edges, and smooth box interior surfaces tended to reduce bruising.

Comparative costs of using pallet boxes and standard boxes handled on pallets show a distinct advantage for the pallet box. A grower-packinghouse operator should be able to save \$70 to \$85 per 1,000 standard box equivalents by shifting from a palletized standard box operation to one using pallet boxes. On a volume of 100,000 equivalent standard boxes, an annual saving of between \$7,000 and \$8,500 might be expected.

One of the more important considerations is the amount of refrigerated space which can be saved by switching to the use of pallet boxes. Depending on the dimensions of the pallet box used, about 20 percent more fruit can be stored in the same storage space than fruit in standard boxes handled on pallets.

Although commercial operators are generally satisfied with the pallet boxes they are using and have realized savings and improved handling, some shortcomings of these boxes need to be given attention. The boxes should be made stronger to resist skewing and other damage. They should have bottoms which do not spring up during handling. They should have better fork entry spaces to facilitate pickup and positioning. They should be designed for easier handling.

One of the more important findings the first year was the amount of bruising and stem puncturing that occurred during the dumping operation, particularly after the apples had been in regular cold storage for 5 to 6 months. It was this that prompted study of this operation during the 1958-59 season.

During the second year's research, emphasis was placed on testing of newly designed boxes, including those employing materials other than wood; on evaluating the side-lifting type of boxes; dumping fruit upon arrival at the storage and packinghouse, with the idea of presizing and sorting it before storage; determining the feasibility of a pallet box designed specifically for movement of the fruit from orchard to plant; study of operations in the plant, including dumping; development of packing-room layouts designed for sorting and sizing fruit before storage; and efforts to design, construct, and test a box-filling device which could be used for mechanically placing the sized fruit in pallet boxes. It was found that a specially designed pallet box for moving fruit from the orchard to the plant would be practicable, particularly if sizing and sorting before storage were done. These boxes could be designed to withstand over-the-road handling, and the storage boxes then might be designed to give the best service in storage, where in-plant movement would not be as rough.

Cooling studies corroborated the first year's results in that the free air space of 8 to 11 percent gave a better cooling rate than palletized standard boxes. Studies of solid side and bottom metal containers, with and without pallets, indicated that refrigerated air needed to circulate around and under the container to cool the fruit satisfactorily. If air could not circulate under the container, the cooling rate was too slow for satisfactory storage. Even with a pallet below, the solid sides and bottom of the metal container impaired cooling. The rather high initial cost puts aluminum and steel pallet boxes at a competitive disadvantage with wood.

The dumping studies were rather revealing, and in connection with studies of preventing bruising during handling, are most important. The inversion-type dumper, which is probably the most generally used in the Pacific Northwest, bruised more fruit than any other method. The tilt-up dumper showed up somewhat better, but still caused a large number of bruises and a high number of stem punctures. Tilting pallet boxes with side gates and emptying apples into water proved more satisfactory. Apparently, the mass movement of the fruit sliding out of the box and dropping into water was easier on the fruit because the individual fruits did not bump against each other. The best method of emptying pallet boxes was found to be the immersion type dumper. In this method, the pallet box is submerged in water and the fruit floats out of the box. This method resulted in about 35 percent fewer bruises and stem punctures than those found with the check, which was standard boxes dumped with the standard drum dumper.

The water dumper offers some other possibilities in the application of chemicals prior to placing the fruit in storage. It would merely be necessary to add the chemicals to the water and each piece of fruit would be treated. The concentration could be controlled by checking the solution from time to time during the dumping operation.

A pallet box filling device was developed and shows real promise of making possible the sizing of apples as they are put into storage. A battery of these fillers can be tended by one man and he can fill the fruit into these boxes at the rate of 600 standard boxes per hour.

With the development of the box filler, presizing and sorting apples into storage may soon become a reality practiced generally. This procedure would be a real economic advantage to the industry. It would provide, for the first time, an inventory for the packinghouse operator of the amount by size and grade of fruit he has to sell. Having this inventory would then give him the opportunity to sell early in his marketing season those sizes that do not keep well, and at such times as the price is best. He could hold the better-keeping sizes for later sale. Conceivably, net returns would be increased sufficiently to more than pay for the extra time and cost of presizing and sorting. At the same time, the off-grade and undersize fruit would not be put into storage and the storage charges or costs for salable fruit would be reduced as a result. This would also have the effect of increasing the apple storage capacity of the industry, since the space normally occupied by the nonsalable fruit would then be available for good fruit.

After most of the first year's work was completed, we published, in AMS-236, "Handling and Storage of Apples in Pallet Boxes," a list of hints on pallet boxes and their use. These are still good and would be of considerable help to anyone wanting to shift to the use of pallet boxes for apples.

If one refers to this publication it becomes obvious that pallet boxes, of necessity, must be a combination of compromises. No one box can be best in every respect, and it is up to the individual user to decide on the specifications to be used in constructing his pallet boxes.

CONCLUSIONS AND RECOMMENDATIONS

of Fruits and Vegetables Work Group

The opening session of this work group was concerned with various types of self-help programs designed to improve marketing and increase grower returns. Important requirements for successful operation of State marketing agreement and order programs brought out in the discussion were:

1. Adequate legislation.
2. High quality of industry leadership.
3. Strong grower support.
4. Decisions based primarily upon economic considerations.
5. Mandatory inspection and certification of all the products being regulated.
6. Careful adjustment of operations and costs to the volume and value of the commodities being regulated.

The group concluded that "Seals of Quality" programs can be useful in improving quality and product promotion, if properly controlled, but felt that these programs were not a cure-all and that their use probably would increase competition between States.

The discussion brought out that bargaining associations have wide application to the problems of fruit and vegetable growers in negotiating prices with processors. Successful operation of a bargaining association is dependent on the following:

1. Adequate tonnage signup.
2. Collection and analysis of needed marketing information.
3. Efficient management.
4. Good membership relations.
5. Realistic bargaining price.

General recommendations of the work group concerning self-help programs were:

1. Due to increasing interest in these programs, industry leaders should give careful consideration to their possible further applicability and use.

2. More educational work needs to be done in the States so that growers may have a better understanding of the merits and limitations of these programs.

At the second session, the work group discussed what is being done to improve fruit and vegetable crop forecasting data.

Considerable progress was reported in developing objective methods and basic data to provide more accurate and earlier preharvest forecasts. It was recommended that this work, much of which has been financed with industry, State, and Federal matching funds, should be continued. The need for obtaining a more accurate tree count on fruits on a national basis was pointed out in the discussion.

Industry groups should not be led to believe that new procedures are a panacea for errors in forecasting, because many variable factors may affect the yield between the time of bloom and harvest. Where more than one State is involved in continuing work of this type, both State and Federal funds are necessary to assure a continuity of operations.

Planned improvements in the Federal Market News Service and the operation of the New Jersey f.o.b. price reporting service also were discussed.

Concerning the Federal service, it was pointed out that expansion of the truck and rail unload report issued each morning, showing fruits and vegetables unloaded in markets by State of origin and commodity, is considered the best possible way to improve supply information. The reporting base should be increased from the present 38 cities to about 75.

There is a need for increased f.o.b. price reporting because this is the area of the greatest industry interest. Terminal markets are becoming less of a factor as "price makers" since many large buyers are purchasing direct from shipping-point areas.

Changing buying practices and production shifts make it necessary to constantly review reporting practices and to be prepared to make changes where needed. The Federal service must work closely with the States to get an effective market reporting job done.

It was reported to the group that under the New Jersey program an effective job is being done in rapid dissemination of f. o. b. price information, as well as information obtained from the Federal Market News Service.

It was concluded that more market news information is needed concerning assembly-point markets. Efforts should be continued to speed up communication of market news information because of the increasing importance of the time factor.

The work group session dealing with packaging and handling reviews the trends in produce packaging and the research work that is being done in the use of pallet boxes for handling and storing fruits and vegetables.

With respect to retail sales of produce, the discussion developed information that:

1. The use of prepackaging for produce varies widely in the differemt areas of the country.
2. Materials and methods for prepackaging are undergoing many new developments.
3. The point of packaging also varies from shipping point to retail level.
4. The trend toward helping the retailer get his merchandise ready for sale will probably hasten the conversion to prepackaging.

Pallet boxes are being used successfully for handling a number of fruits and vegetables, including citrus fruits, tree nuts, and potatoes. They have proved very successful for handling and storing apples. Research work is continuing to determine the adaptability and further possible use of pallet boxes for fruits and vegetables.

GRAIN AND SEED

Work Group Sessions

ADEQUACY OF PRESENT GRAIN AND SOYBEAN GRADES AND INSPECTION PROCEDURES

Clyve W. Jackson
AMS, U. S. Department of Agriculture

Grain grades and grain inspection procedures have been used in the United States for about 100 years. The first grain grades were very simple and were established by the Chicago Board of Trade in 1856. Grain inspection and grading was rapidly adopted by other markets and by several States throughout the country. Differences in grades and inspection procedures between markets created confusion among grain merchandisers and resulted in the enactment of the U. S. Grain Standards Act in 1916. This Act provided for the establishment of one set of national grain grades to be interpreted and applied uniformly to grain in interstate and foreign commerce.

Official Standards of the United States for Corn were first promulgated on September 1, 1916. Such standards for other grains were promulgated later, and are now in effect for barley, corn, flaxseed, grain sorghums, oats, rye, soybeans, wheat, and mixed grain. Each of these standards, except for flaxseed, promulgated in 1935, has been revised or amended one or more times since it was first promulgated. The Secretary of Agriculture is authorized to fix and establish standards of quality and condition for grain which in his judgment the usages of the trade may warrant and permit. He is also empowered to alter or modify such standards whenever the necessities of the trade may require.

Grain standards are designed today for the same purpose as when they were first promulgated, which is principally as a measure of the plumpness, dryness, soundness, and cleanness of the grain. They must be simple enough to be readily understood and rapidly applied at all levels of grain merchandising. Grain standards have been criticized by domestic and foreign parties because they do not reflect certain quality factors for specialized purposes, such as protein content of wheat and oil quantity and quality in soybeans and flaxseed. Tests for some of these specific quality factors have been developed, but because of cost and time involved, and perhaps other reasons, they have not been incorporated into the official standards.

Grain grading equipment and inspection procedures have greatly improved during the past 25 years. Machines, devices, and procedures are available and are used for obtaining, mixing, and dividing samples, and in making moisture, test weight per bushel, dockage, pearling, and sizing tests.

The official standards and inspection procedures are not fully adequate to meet the needs of all segments of the trade. These needs are so diverse that it is practically impossible to meet all of them satisfactorily. The standards and inspection procedures are under continuous review as they are being applied daily. Efforts are being made in the U. S. Department of Agriculture and elsewhere to improve the grain standards and grain inspection procedures to meet the necessities of the trade.

PROBLEMS OF GRADING AND STANDARDIZATION IN EXPORTING GRAIN

Adam A. Keller
Louis Dreyfus Corporation

The inspection of all grains affects everyone who produces, buys, sells, processes, or exports grain. I have the greatest respect for the work that is being done by the inspectors under the supervision of the Agricultural Marketing Service, Grain Division. This is one department of our Government that appears to be understaffed because of insufficient funds. This prevents them from giving adequate supervision over the local inspection departments. Exporters generally have to buy their grain on western inspection and when the grain arrives at the port, the local inspectors sometimes place a different grade on the shipment, even though no evidence of deterioration was found. We agree, the percentage of cars that do not grade as per the western inspection is small, but this difference in grade has been costly to exporters on occasions, because of demurrage on ships and default on their foreign contracts. The principal differences in grades are: other classes, damage, and foreign material. The human element also enters the picture and it is this difference of opinion between western and local inspectors, as well as the Federal inspectors, that gives the exporter real trouble. The Board of Review has been, and still is, trying to solve this problem, and when they do,we will have uniform grades throughout the country.

Over the years, the grain standards have been changed to meet the requirements of our own people as well as the foreign buyers. The reduction in the number of classes and the amount of foreign material allowed in wheat and in soybeans has reduced the complaints from foreign buyers. For sometime I have been suggesting that the foreign material in soybeans be considered as dockage. The reason for this is to eliminate trouble in loading vessels. For example, when loading #2 yellow soybeans, and the foreign material exceeds 2 percent, the seller is in default of contract, but if it were considered dockage, he would be in contract and the buyer would get the proper discount for dockage. The dockage in wheat should be reduced to 5/10 percent and break on each 5/10 instead of the present 1 percent. The question of dockage in any grain has concerned me for years and I cannot find any valid reason for paying freight on dockage which should have been removed.

The corn standards were changed on October 1, 1959, and that should benefit all of us, as well as the foreign buyer. Corn is one of the most difficult grains to handle from an export standpoint. The principal trouble is due to the early harvest of high-moisture corn by the use of the mechanical pickers and shellers, and the great amount of drying required to make 15.5 percent moisture. We have received a number of complaints from Europe about American corn arriving sour, heating, and with excessive amounts of foreign material. These complaints should concern all of us and will require a great deal of study to arrive at a satisfactory solution. Basically, the trouble is the early movement of corn that is harvested before it has matured.

The moisture in the soft wheats allowed in the standards is too high, and we should consider making the limit 13 percent instead of the present 14 percent. Soft wheat is difficult to store at 14 percent and many large elevator operators will not store soft wheat for long periods of time unless it is 13 percent. Foreign buyers in the warmer climates are asking for 13 percent moisture or less in order to avoid deterioration before they can mill the wheat.

We have talked about the difficulties of grain inspection but we should take a look at the merchandisers, who handle the grain from the producer until it is processed or exported. Each one of them adds lower quality grain to the grade, providing the factors within the grade will permit. All of this blending increases the work of the inspectors, and in some cases they need a crystal ball to determine what is the proper grade.

FOOD AND DRUG ADMINISTRATION'S CLEAN GRAIN PROGRAM

Shelbey T. Grey
Food and Drug Administration
U. S. Department of Health, Education, and Welfare

Most of you, I am sure, are familiar with our work and those of you who have participated in the clean grain program, as well as the industry as a whole, are to be congratulated on such splendid cooperative efforts to bring about an improvement in the quality of wheat now being used for human food purposes.

I would like to outline briefly the history of our program, which is based on the Federal Food, Drug, and Cosmetic Act of 1938. This Act requires that foods shipped in interstate commerce be wholesome and clean, and handled at all times under sanitary conditions to prevent contamination with filth. It, of course, applies to our food grains and to cereal products prepared from them, as well as to other foods.

The law provides for seizure of filthy foods as well as injunction or prosecution of the shipper of such foods, or persons who allow foods to become filthy, while held for sale, after shipment in interstate commerce.

The history of our clean grain program goes back to the enactment of the 1938 law which authorized factory inspection and extended the definition of "adulteration" to include the preparation of food under insanitary conditions. In the early 1940's we started an inspection program in bakeries and flour mills with gradually increasing regulatory activity in flour mills.

By the middle 1940's, as insanitary conditions in bakeries and flour mills were improved, increasing concern developed over significant contamination being contributed by the grain.

During 1948 and 1949, the milling industry believed that the program was resulting in too much pressure based on grain contamination. The mills believed that "hidden infestation" in grain was a major problem and that cooperation of the grain trade, and the U. S. Department of Agriculture, was essential to further progress. Therefore, we initiated a cooperative investigational program during 1950-51 to determine the relationship of grain contamination to extraneous matter in flour, and the extent of this contamination and the need to develop methods for detecting and measuring insect infestation in grain. The results of the survey were published. These results disclosed that large quantities of wheat were contaminated with insects and their excreta, and rodent excreta, and that the milling machinery was not removing all of this filth during the milling process. It was obvious that if we were to have clean cereal foods the objective must be to keep filth out rather than try to clean wheat after it had become contaminated.

We therefore developed a plan of action through discussions with the grain trade, the milling industry, and the U. S. Department of Agriculture. It was agreed that we would participate in educational programs and further disseminate information concerning how to deal with insects and rodents. Authoritative information on insect and rodent control was provided by the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, and by the Fish and Wildlife Service, U. S. Department of Interior. In the spring of 1952, we made a series of initial inspections in country and terminal elevators designed primarily to be educational. At that time our inspectors pointed out to the elevator operators conditions observed which, in their opinion, could cause the grain to become contaminated.

In September 1952, the "enforcement phase" of the program was begun. Market sampling of wheat was started with seizure of cars of rodent contaminated wheat - i.e., those exceeding one rodent pellet per pint, as the objective. Elevator operators were warned that insanitary elevators could result in legal action.

During March 1953, the Senate Committee on Agriculture and Forestry held hearings on the grain sanitation program. In May 1953, a 17-man committee was appointed by Secretary Hobby of Department of Health, Education, and Welfare and Secretary Benson, U. S. Department of Agriculture, to study the grain sanitation program and make recommendations. Our enforcement program was suspended pending the report of this committee. The report was studied by both Departments and in January 1955, we resumed a regulatory program calling for seizure of grain containing more than 2 rodent pellets per pint and/or 2 percent or more of insect-damaged kernels.

In July 1956, we lowered these tolerances to one or more rodent pellet per pint and/or 1 percent or more of insect-damaged kernels. These are still our bases for action. We are convinced that progress has been made in the quality of wheat now being used for human food. Our inspections of elevators show that more attention is now being given elevator sanitation, the examination of incoming grain, and fumigation as an early preventive, than was the case when we started. During fiscal year 1959, we seized 72 carloads and truckloads of wheat because of rodent contamination, and 4 carloads or truckloads because of insect infestation.

We have developed some rather interesting statistics which I would like to offer at this time.

Our initial sampling program during 1950-51,revealed 4.9 percent of the cars contained one or more rodent pellets per pint; an intermediate sampling program carried out during 1955-56, revealed 2.1 percent of the cars contained one or more rodent pellets per pint, whereas our 1958-59 random sampling program revealed 3.25 percent similarily contaminated.

We are offering these figures for what they may be worth, since we recognize that our limited sampling operations are subject to sampling errors, and that there are seasonal or yearly variations in the degree of contamination, even though our sampling is carried out on a year-round basis. Regardless of whether or not we accept these figures at face value, it is very evident that the rodent problem is still present.

And if we do accept them at face value, it appears that there has actually been some retrogression since 1956, when our program reached a peak of enthusiasm and activity. These figures suggest that we must have renewed interest in the program if we are to succeed, and that any letdown in our efforts might see all of our progress wiped out. We have maintained enforcement pressure and have shown an increase in the number of seizures during the past year.

We do not have comparable data on the incidence of insect-damaged wheat since the seizures appeared to have been more or less isolated lots and not indicative of an industry index. We feel, however, that the industry has made greater strides in the elimination of insects than rodents, possibly due to the fact that such control may be somewhat more easily accomplished.

Since January 1, 1955, when we resumed this program, and June 30, 1959, we have seized 207 carloads or truckloads of wheat because of rodent pellet contamination, and 7 due to insect contamination. Eight elevators were enjoined and 3 prosecuted in the Federal courts for storing wheat under insanitary conditions.

The diversion of seed grains, treated with poisonous fungicides, to food use has become a real problem. Since commencing our clean grain program we have seized 33 carloads of wheat contaminated with mercurials, plus 6 carloads of barley, 6 carloads of oats, and 5 carloads of corn similarily treated.

It would appear from these statistics that considerable disregard still exists by some growers and elevator operators in the handling of so-called "pink wheat," and other grains treated with poisonous fungicides. This year alone we have seized 10 carloads of wheat containing mercurial residues, and we are increasing our regulatory efforts in this field.

While much has been accomplished since inception of the clean grain program, we feel there is much still to be done to educate and impress growers and elevator operators who have not felt the impact of our educational and regulatory activities. This, we feel, can be accomplished through efforts of State officials such as you assembled here today. Our grain supply is far from being really clean, and much must still be done to provide suitable clean raw material for food processing. We have merely "scratched the surface" on wheat, and still have to develop effective programs to clean up our supply of corn, barley, rye, oats, and buckwheat. Here we are faced with a still tougher problem, since a much smaller proportion of these grains are used for human food products as contrasted to the high percent of wheat so used.

We are presently in the midst of a nationwide survey to check the extent of radioactivity in various food products, including grains. This is mentioned only to bring to your attention the many problems with which we are faced in the cereal and grain fields.

Because of your close contact with members of this industry, we need your cooperation in educating growers and elevator operators to their responsibilities in producing a clean and wholesome grain supply. No doubt much could be accomplished if chronic violators were called to our attention. Elevator operators should be encouraged to examine all lots of incoming grain in an honest effort to keep contamination at a minimum, since there is a tendency for contamination to increase as grain is placed in new storage facilities. Unless this is done there may be a tendency to place the blame for contamination on one of the other handlers instead of accepting one's own rightful obligations.

Since some of you may not be familiar with the steps required in effecting a seizure, I shall briefly outline such procedures. When an actionable level of contamination is found, the several steps preceding seizure are:

1. Approval by FDA headquarters.
2. Approval by the Department of Justice, which requests the U. S. Attorney to file a libel with the Clerk of the Court, which authorizes the U. S. marshal to attach, or seize the lot.
3. Attachment of the lot by the U. S. marshal.

FDA headquarters approval is obtained by telephone as soon as the analytical results are available at the District office. The facts are then reported by FDA headquarters to the Department of Justice with a recommendation that the grain be seized. If the Department of Justice approves, it refers a request to the U. S. attorney in the District where the grain is located for the filing of the libel. The procedure up to this point ordinarily does not require more than 3 days, unless a weekend intervenes. As soon as approval by FDA headquarters has been obtained, our District office contacts the owner of the grain, or the consignee, and advises him that the grain is to be seized, so separate binning may be provided, and other steps taken to preclude excessive demurrage. At the same time our District office calls the U. S. attorney and the U. S. marshal to alert these officials that a seizure request is in process, to assure expeditious handling. The entire procedure usually requires not more than 1 week, if all goes well.

The notification of the owner of the grain that seizure is contemplated is based upon a cooperative agreement with the trade which has informally agreed that such cars will be held for seizure. If the situation were to result in diversion of the grain so that it could not be located for seizure, the agreement would have to be terminated, but we have no reason to believe that this will occur.

Once seizure, which is a civil action, has been accomplished the former owner or his agent may take one of three courses:

1. Ignore the libel and seizure, in which case the return date imposed by the court will expire, no answer will have been filed, and the case is in default. The court will then order disposition of the grain in accordance with the requirements of the law.

2. Appear as a claimant, consent to the entry of a decree of condemnation, forfeiture, and destruction, with a proviso for release of the wheat under penal bond, for bringing it in compliance, such as for example, conversion into animal feed. The claimant must pay the costs involved and post a good and sufficient bond with the clerk of the court to guarantee compliance with the terms of the decree, and the reconditioning operations, if authorized, must be carried out under supervision of FDA. The finished, converted, or salvaged product must not be sold or disposed of contrary to the provisions of the Federal Food, Drug, and Cosmetic Act, or the laws of any State or territory in which sold.

3. If the prior owner does not agree with the Government's charges or believe that the grain is adulterated, he or his agent may file an answer with the clerk of the court, denying the allegations of the libel. The court will then set the case down for trial.

Now, in conclusion, I should like to make a statement of what we in the Food and Drug Administration consider the ultimate goal in all of our enforcement programs, of which the cereal sanitation program is just one among many. This goal or objective may be said to have three parts:

1. Through combined educational and enforcement processes, create in industry and on the part of each individual firm an awareness of its responsibility under the law, and a knowledge of what the law requires;

2. Assist industry, where possible, in the development of methods for examination of raw materials and finished products for compliance with the law, as a basis for establishing an adequate self-policing or control system;

3. Bring about the establishment of such control systems by each individual firm, to assure, with reasonable certainty, that all of the firm's output is in compliance, and to protect against "accidental" violations.

Once a firm has established such a control system, that firm represents a minimum work obligation for the Food and Drug Administration. Until that time, however, regardless of how satisfactory conditions may be at a particular time, we may have substantial doubt as to the firm's compliance at all times. This means that we must continue to schedule inspections and examine the firm's output. At the present time the industry as a whole has not attained this goal and we find it necessary to step up our activities in an effort to bring about such conditions.

I am sure that any steps which you may or can take in bringing about such realization on the part of industry will assist materially in reaching this goal.

NEW DEVELOPMENTS IN SEED PROCESSING AND HANDLING

Charles E. Vaughan
Mississippi Agricultural Experiment Station

In discussing new developments in seed processing, I think it necessary to describe briefly the equipment used for seed separation.

The air and screen machine is considered the basic piece of equipment in most processing plants. It is usually the first machine used in the processing line. Seeds are first cleaned with this machine and then are conveyed to other machines for the final cleaning and separation. This machine uses screens of perforated metal and woven wire mesh to make separations by size and shape. The size of this machine varies from the small two-screen farm model with one air blast to the large commercial types having 4, 5, or even 8 screens and two sources of air. There are over 200 sizes of screens from which any combination may be selected. In cases where only one machine is needed or can be afforded the air and screen machine is the logical choice.

When seeds are harvested with a combine, they may contain a high percentage of foreign material, consisting of trash, stems, leaves, and freshly killed insects. If this material is green, the seeds will be difficult to handle and dangerous to store unless this material is removed. In cases like this it is necessary to use a scalper prior to the cleaning operation. After the seeds have been scalped to remove most of the foreign material, further conditioning of the seed may be needed. It may be necessary to put the seeds through a debearder in order to break some seeds apart, remove awns and points of attachment, and remove excess chaff from the seed. This delivers the seed to the cleaners in a condition that will allow accurate cleaning and close grading. Some seeds must be hulled before cleaning. This is done with special hulling equipment.

Another type of processing machine that is widely used is the length separator. One type of length separator is the disc separator that consists of a series of discs which revolve together on a horizontal shaft. Each disc contains hundreds of undercut pockets on each side. As the discs revolve, the pockets lift out the short seeds and reject the longer seeds. The long seeds are conveyed by blades on the disc spokes to the end of the machine and are discharged through the tailings gate.

The cylinder separator is another type of length separator. The cylinder separator consists of a long cylinder in a horizontal position with hundreds of semispherical indents that line the inside surface of the cylinder. As the cylinder revolves, the short seeds are lifted out of the mixture by the indents and dropped into a trough inside the cylinder. An example of this type of separation is vetch from oats.

The specific gravity separator or gravity table utilizes a combination of the following characteristics of the seed in order to make a separation: Size, shape, and specific gravity. The seeds to be separated are caused to flow across an inclined reciprocating deck. The deck is mounted on inclined toggles which impart two motions to it; an up and down motion and a backward and forward motion. The deck is covered with an open mesh material through which air is blown. The air is used to float the layer of seed in such a manner that it becomes stratified, the light seed rising up to the top, and the heavier seed settling to the bottom. The effect of stratification and the movement of the deck enables a separation to be made on the basis of specific gravity.

The roll mill, or dodder mill, as it is sometimes called, separates seeds by their difference in seed coat texture. A pair of rollers covered with a velvet-type material are placed side by side close enough to touch lightly. The rolls are mounted in an inclined position and turn in opposite directions, outwardly when viewed from the top. The seed mixture is fed onto the rolls at the top of the machine. As the seeds travel downhill between the revolving rollers, the rough seeds are caught by the covered rollers and thrown over the sides. The smooth seeds continue bouncing downhill between the rollers and are discharged from the bottom of the machine.

With some seeds there exists a difference in degree of roundness. These seeds may be separated by using a spiral separator. The seeds are fed onto the spirals from a hopper at the top, and as they move down the inclined flights, the round seeds travel at a much faster speed. The momentum of the round seeds increases until they gain enough speed to run over the edge of the inner flights into the outer flight. The other seeds continue sliding down the inner flights to the bottom and are discharged through another spout.

It is somewhat difficult to remove the seed of buckhorn from clover and alfalfa seed with any of the machines previously mentioned. The seed coat of buckhorn is mucilaginous, and, when moistened with water, will pick up any foreign material with which it comes in contact. The buckhorn machine was developed to utilize these characteristics. The machine wets the seed to make it sticky and then applies finely ground sawdust that adheres to the buckhorn seed. This changes the relative size and specific gravity of the buckhorn seed in relation to the clover and alfalfa seed. This makes it possible for a separation to be made on other types of machines.

There are a few relatively new developments in seed processing and handling. Electrostatic separators have been receiving considerable attention in the seed industry. The electrostatic process was developed primarily for use in mining; but we are attempting to determine if it can be successfully used in seed separation. Successful separation of materials by the electrostatic process is dependent upon the components of a mixture possessing different electrical properties. It has been found that relative humidity of the air and moisture content of the seed must be within certain limits before a separation can be attempted. Why some seed separations can be made while others cannot, and why all lots of the same mixture do not always react the same are a few of the many unanswered questions concerning this process. Separations that can be made by this process include white clover from pigweed, dock from red clover, and hulled Johnson grass from sesame.

The magnetic seed cleaning process is not new when measured by the length of time the process has been available for use. However, its general use has not become as widespread as that of other types of seed separators. Because of renewed interest and study, this process will be discussed under new developments. In the magnetic separation process, iron powder is mixed with moistened legume seeds which contain rough, granular, or gelatinous-coated weed seed or other rough material. The iron powder sticks to these materials, which are pulled out of the crop seed when the mixture is passed over a magnetized drum. The cleaner is most commonly used on legume seeds containing dodder or buckhorn. It has been determined that not all iron powders are equally effective, and that all hulled Johnson grass can be removed from alfalfa and red clover seed by this process. To my knowledge, that is the only way it can be accomplished.

The use of air-lift elevators or pneumatic conveyors to convey certain seeds has been a tremendous improvement over bucket elevators and other types used. One big advantage of this type of elevator is the fact that it is completely self-cleaning. Seedsmen have noted the wide use of pneumatic elevators with small-seeded legumes and grasses and are asking about the practicability of using this type of conveying system for larger agricultural seeds. In an attempt to answer these questions for the seedsmen, tests were made with corn and soybeans. The tests revealed that practically all handling operations damage extremely dry or very wet seed to some extent. It is unfortunate that seeds containing the right amount of moisture for safe handling have too much moisture for safe storage.

Another rather recent development in the handling of seeds is the continuous bucket elevator with an internal discharge. It has two distinct advantages over other types of bucket elevators. Since there is no space between buckets, the speed of operation can be greatly reduced, and as a result there is no seed injury even with very fragile seeds. The reduced speed of this type of elevator in comparison with other bucket types does not imply that there is a loss in capacity. Self-cleaning is another advantage of this type elevator. The seeds are fed directly into the buckets as they pass under the feed hopper. The discharge is complete from directly above the discharge spout. There is also no boot to contain a residue of seed that has so often been a source of contamination on other bucket types.

I would like to tell in what ways the Mississippi Seed Technology Laboratory could be of assistance to a group like this. Our program is divided into three phases of work: Research, service, and training.

Seed research is the primary objective of the Seed Technology Laboratory. Research is being conducted in all phases of seed technology. In the field of seed testing, research projects are being conducted on the use of seed and seedling characteristics which may be used for identification in certain crops, the tetrazolium test, vigor testing in corn and grain sorghum, and other closely related projects.

Of primary interest to this group would be the research being conducted in the field of seed processing and handling. Combine harvesting of corn is usually cheaper than harvesting by more conventional methods. However, should this method find use in the harvesting of seed corn, several serious questions would be raised, one of which would include the effect of combining on seed injury. A project is being conducted to find the answers to these questions.

A blending project is being conducted to determine the mechanical procedures necessary to blending a lot of seed to a homogeneous or uniform condition. It includes the development bins, mechanical dividers, and other facilities with which seed lots may be more adequately blended.

Projects are also being conducted on drying, storage, and moisture determination. As previously mentioned, work is also being done on the electrostatic separation of seed, and the effects of air-lift elevation on the viability of corn and soybeans.

Better ways of cleaning seed and improving the quality are also of primary importance in our seed research. Tests have shown the gravity separator to be useful in improving the germination in some lots of carryover corn by removing the lightweight kernels which were also of low vigor. The forestry people used the gravity table for removing empty pine seeds from the full ones. This proved to be a money-saving process, as 20 percent cold storage space was saved.

Apparently there is no end to the unsolved problems of seedsmen. As a result we are called upon quite often for processing information. Many of the requests for processing information are accompanied by seed samples of 5 to 10 pounds in size. Obviously, these are much too small to test on the commerical-size equipment. To get around this difficulty, a laboratory or model testing section has been set up which contains working scale models of practically all the major types of processing equipment. If a seedsman would like to know whether a certain disc or cylinder will remove this or that weed and will send as much as a 5-pound sample, the laboratory can supply him with that information. The models do not always perform exactly like the commercial-size equipment, but despite these limitations, we are finding them very useful.

Although the laboratory was initiated principally for research and the appropriated funds are chiefly for research, the facility offered an opportunity to develop a unique seed training program. As developed, it has three main objectives:

1. To provide some general seed training to all agricultural students regardless of their major field of study.

2. To provide a separate and entire seed curriculum for the training of seed specialists.

3. To further the training of persons already engaged in the seed trade, through annual short courses.

We are attempting to realize these objectives through a curriculum set up under the Agronomy Department in which B. S., M. S., and Ph D. degrees are offered, and through annual short courses for the seed groups.

In addition to taking most of the courses prescribed for agronomy majors, the seed technology student gets extra courses in business law, accounting, agricultural engineering, and seven "seed" courses. He learns, among other things, how to produce hybrid seed corn, how male-sterile cytoplasm and restorer factors are utilized, the effect of boron on seed production of legumes, some of the problems associated with foundation seed production, the importance of the plant breeder to the seedsman and farmer, the importance of seed treatment, and proper drying and storage.

He learns the operation of combines, the principles on which seed separation are made, how to operate equipment in the seed plant, how to disassemble them if necessary, and how to clean them thoroughly.

The student is taught how to draw samples, run purity tests, determine germination, run moisture tests, identify and control important weeds. Considerable time is spent on the study of State and Federal seed laws, the seed trade organizations, seed trade magazines, and government market reports. Every student is given the opportunity of working in the laboratory when not in class. This provides the laboratory with needed help and the student with additional experience and financial assistance. When the student graduates he doesn't know everything by any means but we think he is well enough trained that he can step into private industry and make himself immediately useful to his employer. About 40 men have graduated from the seed technology curriculum.

To meet the objective of training for on-the-job seedsmen, each spring we provide a short course, sponsored by the Mississippi Seedmen's Association. This short course is usually attended by about 225 seedsmen from all segments of the seed trade and from 25 or 30 States and 3 or 4 countries. The seedsmen-students have the opportunity of observing the operation of all machines, running any and all equipment, and testing seeds. The "graduates" of this short course now number well over 1,800.

Through these three phases of our work at the Mississippi Seed Technology Laboratory, we feel that we have something to offer you; through our research by studying basic problems, through our service by supplying you with processing information and our willingness to accept your problem as ours, and through our training by providing well-trained men to step into any phase of seed work.

PROBLEMS IN INITIATING A SEED QUALITY IMPROVEMENT PROGRAM AND HOW TO OVERCOME THEM

T. Wayne Still
North Carolina Department of Agriculture

The original idea for setting up a seed quality improvement and marketing program was conceived during the 1957 National Marketing Service Workshop at a breakfast meeting attended by representatives from Alabama, Georgia, North Carolina, South Carolina, Virginia, and Maryland. At this meeting, the State representatives pointed out that our marketing problems of seed and grain were becoming more and more on an area basis and not confined to any particular southeastern State. Therefore, it was suggested that the needs and possible benefits of a seed service and marketing program be explored in the respective States.

Upon returning from the conference, specialists of the grain section, division of markets, took a closer look at the need for such a program and found that the annual loss to the farmers of North Carolina as a result of planting seed of inferior quality was almost impossible to determine but ran into the millions.

Weeds alone cut heavily into the farmers' profits by reducing yields and quality and by harboring insects and diseases. Planting seed of high purity has an immediate effect toward reducing this loss.

Losses due to fungus and bacterial diseases of commercial crops in the United States amount to about a billion dollars annually. Proper seed treatment and its application plus planting disease-free seed stock reduce this loss drastically.

Producers who are not quality minded suffer another loss in the form of poor crop stands, or no stands at all, as a result of planting seed incapable of producing healthy plants in the field. Yet, in the past, emphasis had been placed primarily on seed production, certification, and regulatory control. Little had been done in the way of assisting the seed processors, handlers, and distributors in conditioning and marketing seed of the quality needed by our farmers if they are to obtain the greatest per acre yield possible. In this age of acreage allotment, the producer must rely on volume per acre rather than upon acreage. One of the best ways to insure this volume is to make available to him, at prices he can afford to pay, seed of the highest quality obtainable. Our seed service and marketing program is designed to do just that by providing a service to the processors and handlers of seed which will enable them, if they have the desire, to improve upon their ability to prepare agricultural seeds for market and do it in an efficient, profit-making manner.

Following the 1957 National Marketing Workshop, members of the grain section conferred with the director of the division of markets to discuss the needs for a seed quality improvement program in North Carolina and to outline the approach in developing this program. In addition to the justifications mentioned, it was pointed out that during the period November 15, 1956, to March 1, 1958, inspectors with the seed testing division, North Carolina Department of Agriculture, registered 211 violations of the North Carolina Seed Law. Of this number, 110 were for lots of seed mislabeled as to noxious weed seed content. To be able to market locally grown quality seed, the processors of North Carolina are faced with an enormous problem.

Following this meeting, the director of the division of markets called a special meeting with other State agencies to discuss the need for the program and to get their reaction as to its possibilities as a seed service and marketing program. Attending this meeting were representatives of the North Carolina State College Extension Service, the research staff of North Carolina State College, North Carolina Crop Improvement Association, State seed testing division, the director of the division of markets, and grain marketing specialists and engineers from the cotton and engineering section. The representatives agreed unanimously that such a program was needed and that the agencies they represented would cooperate wholeheartedly with the division of markets in carrying out the program. The consensus was that the service program could best serve its purpose by being organized as a part of the grain section of the division of markets, because seed work is more closely correlated with grain work than with work of other sections of the division.

Prior to formulating a plan of work for the new program, the marketing specialist in charge attended the seedsmen's short course at Mississippi State University to broaden his knowledge of seed handling and processing, and to become familiar with the latest types of processing machinery available to the industry and the techniques involved in its use. To draw upon experience gained by other States with similar programs already in effect, the specialist visited and corresponded and traveled with their representatives, to observe how their programs were administered. The information gained from these activities was quite helpful in formulating and in developing an outline for the new program. After reviewing the outline with members of the grain section, the director called a meeting of the cooperating agencies and presented the outline to them for their consideration. Approval of the outline for the program was received from all representatives of the agencies participating.

Since the program is intended primarily to assist our seed processors and handlers, it was logical that the program be presented to the seedsmen of North Carolina for their approval or disapproval. Consequently, the specialist in charge presented the program to the North Carolina Seedsmen's Association at their annual convention in the summer of 1958. Acceptance of the program was unanimous, assuring the division of markets the cooperation of the seed industry of North Carolina in carrying out the program.

Our seed service and marketing program is designed to improve the quality of seed planted and offered for sale in North Carolina by personal assistance to the seedsmen in the processing, handling, storing, and marketing of seed regardless of the source.

We realize this program embodies a great task and requires personal contact with every processor whether he is a custom processor only, a combination custom processor and marketer, or a firm who processes only the seed it markets. But we believe the program is of extreme benefit to the agriculture of our State and warrants a lot of work.

In carrying out this program, we have set up 11 major objectives which we feel are necessary if we are to do the program justice.

The objectives of the seed service and marketing program are:

1. Conduct a survey of North Carolina to obtain:
    a. The name and location of seed processors.
    b. An inventory of seed processing equipment.
    c. The kinds and varieties of seed processed.
    d. The custom seed cleaning and treating charges.
    e. Any other pertinent information.

2. Assist seed processors in determining the proper procedure and methods in processing seed.

3. Assist in the design and layout of seed processing plants in order to achieve greater efficiency.

4. Assist seed processors and farmers in the identification of weed seed and weed seed plants.

5. Instruct seed processors in the official methods of sampling lots of seed to secure representative samples.

6. Stress to processors and farmers the importance of planting only seed of known and recommended varieties.

7. Encourage seed treatment and the proper application thereof.

8. Cooperate with other agencies in all phases of seed processing, storing, drying, treating, testing, and research to aid the seed industry of North Carolina.

9. Assist processors and handlers in the interpretation of and compliance with Federal and State seed laws.

10. Maintain a close relationship with seed processing equipment manufacturers and their representatives.

11. Cooperate with the Seedsmen's Association in disseminating information and maintain a close working relationship with the members.

We of the department are pleased with the acceptance and accomplishments of the program. The seed processors of our State are not accustomed to having officials of the department of agriculture visit them in a service matter, but rather in a regulatory one. Upon entering plants and explaining my work and purpose of visit, I have been asked questions such as, "How much does it cost? What do I have to do?" My immediate reaction, of course, to this situation is to go over the entire program with them. At every possible opportunity, we stress the fact that the program is a service rather than regulatory program.

Here are a few examples of how we have been able to help the processors in the efficient preparation of seeds for market.

We have one hybrid-corn processor who markets around 2,000 bushels of corn each year. He has good equipment but it is scattered over a wide area in three separate buildings, requiring a lot of manpower and increasing his cost of processing and decreasing his profits. I am happy to report that this man now has a two-story building to house his equipment and we have furnished him with plans to install his machinery. Only one man, other than himself will be required to process the seed and do the job in one-third the previous time required This plant was designed to permit cleaning other kinds of seed by bypassing the machine not utilized in the operation.

Upon visiting one plant, I found that the air and screen machine, which was the only machine required to clean this particular commodity, was running empty 50 percent of the time and overloading the screens a large part of the remaining time. The cause--no way to regulate the amount of seed going to the machine, as there was no holding bin above the machine and no feed control on the elevator. The remedy--installation of a gate on the elevator to insure a steady flow of seed to the machine commensurate with its ability to aspirate and grade. The cost--very slight.

One last example I would like to give is that of a hybrid-corn plant processing several thousand bushels of corn each year. By installing a holding bin and a ring grader, this operator is able to shell a drying bin of corn, convey it to the holding bin, separate the rounds from the flats, transport it to the width and thickness grader, and never touch the corn. Before the bin and grader were installed, the seed was bagged off the sheller and unbagged into the next machine in the processing line. This remodeling reduced the hand labor required to a minimum.

On numerous occasions assistance has been given in the selection of screens for specific separations, demonstrations have been given on adjusting the machinery, suggestions made for ways to prevent mechanical mixtures, recommendations made for installation of additional separating machinery, and suggestions made for the installation of a seed treater.

The point I want to make is this. Inefficiency costs someone money, either the producer, processor, or both. It costs the producer in the form of higher cleaning costs and a product of poor quality. It costs the processor in the form of loss of customers and higher operating costs.

CHANGES IN GRAIN TRANSPORTATION AND THEIR EFFECTS ON MARKETING

Robert C. Haldeman
AMS, U. S. Department of Agriculture

My staff and I have been privileged to have recent assignments to determine what the St. Lawrence Seaway will mean to United States grain transportation, and to make a rather comprehensive survey of grain transportation in 11 of the 12 North Central States. Wisconsin was excluded.

In the following remarks, I will draw on information from these two studies. Many of you know about our findings regarding the Seaway as published in Marketing Research Report No. 319, "Potential Effects of St. Lawrence Seaway on Costs of Transporting Grain." Generally, the study indicated transport savings would be sizable in the export grain business and would result in grain movement to the lake ports for overseas shipment from a broad hinterland covering approximately the same area we included in the North Central States survey. Also indicated was the absence of economy for movement of United States grain from Great Lakes ports to Atlantic Coast ports, using the Seaway route.

Results of the North Central States survey are now being analyzed for a report which should be published within the next couple of months, so when I refer to figures from this survey, please bear in mind I am using preliminary data. In this analysis of grain transportation changes and their effects on marketing, I have drawn on these studies and on secondary statistical data from grain exchanges, port authorities, and boards of trade. I have used also grain movement information, as developed and published by the several colleges in the North Central States.

In 1942, a 9-foot navigable channel became available on the Tennessee River for the 638 miles from Knoxville, Tenn., to Paducah, Ky., at the mouth of the river where it joins the Ohio. Grain traffic in 1942 totaled about 3 million bushels. It increased to 37 million bushels in 1957, to 62 million bushels in 1958, and through September 1959, exceeded that for the comparable 1958 period. Much of this grain goes into feed production for the expanding southeastern poultry and livestock industry.

Barge shipments of grain from the Minneapolis-St. Paul market on the upper Mississippi River have increased from 19 million bushels in 1954 to 54 million in 1958. Much of this grain moves to Baton Rouge and New Orleans for export. About 65 percent of the total movement into these ports is by barge. Domestic movement is to Tennessee River ports and to Memphis, Tenn.--for rail or truck transshipment into the Southeast.

Barge receipts at Chicago--moving from ports along the Illinois Waterway--increased from 27 million bushels in 1954 to 44 million bushels in 1958.

The relative volume of rail receipts to total receipts at various markets on commercially navigable waterways has declined in recent years. To Chicago, rail volume has declined from 75 percent of total grain receipts in 1954, to 61 percent in 1958. To Toledo, the decline was from 91 percent to 81 percent;

to St. Louis, from 73 to 60 percent; and to Minneapolis-St.Paul, from 98 to 86 percent. For these markets, during the 5-year period, total receipts increased 20 percent while rail receipts increased less than 3 percent.

Another example of recent change in grain transportation is in the rail movement to ports for export. In 1954, January through September, the North Atlantic ports accounted for 42 percent of the United States carloads of rail grain received for export. In 1959, through September, the carload grain unloads at the North Atlantic ports equaled 19 percent of the total, and ports on the Great Lakes received 11 percent. This reflects the opening of the St. Lawrence Seaway late in April 1959. For May through September 1959, carloads of grain for export received at North Atlantic ports declined over 41 percent from 1958.

On the basis of inspection data, movement of United States grain through the Seaway for the 1959 navigation period through October totaled about 100 million bushels. About 77 million bushels moved directly overseas. Duluth-Superior accounted for 83 percent of the direct overseas shipments, and Chicago for 16 percent.

An interesting development is the change in grain movements from Duluth-Superior. Prior to the Seaway, Duluth-Superior originated the major lake movements of grain to Buffalo, N. Y. In 1958, the movement was about 72 million bushels. For the first 10 months of 1959, the volume was about 39 million bushels. The direct overseas export movement supplanted much of the movement to Buffalo. This year's total receipts of U. S. grain at Buffalo by lakeboat through October are estimated at 49 million bushels.

Let us now examine motortruck transportation of grain. Neither the outbound proportional nor the "transit balance" rail rates apply on grain entering primary markets by truck. The rail rate structure includes milling and storage-in-transit privileges at market and milling points. These privileges permit the movement of grain to a point where it is stored or processed, and the movement of the grain or its products to final destination, at the through rate from the point of origin of the grain. The "transit balance" depends on the rate into the milling point and is the difference between the through rail rate from origin to destination and the rate from origin to the milling point.

These transit balances generally are lower than the applicable proportional rail rates on grain that apply from most of the major markets (the proportional rate is a reshipping rate that is published specifically for use only as a factor in determining a combination through rate, and applied only when the movement into the market has been by rail or water). On grain going to destinations where proportional rates are not available, the through rate with transit privileges applies. Therefore, truck movement of grain to major markets, excluded from these advantageous rail rates beyond, is tied in closely with outbound movement by water routes.

As navigation channels have been improved and marine transfer facilities constructed, truck movements of grain to ports on commercially navigable water have increased. Growth in trucked grain receipts at the Minneapolis market has been phenomenal. From less than 6 million bushels in 1954, the volume in 1958 increased to about 50 million bushels. To St. Louis, the volume increased from 16 to 36 million bushels; and to Kansas City from 3 to 10 million bushels. Similarly, truck receipts have increased to ports on the Great Lakes. To Chicago the volume rose from 12 million bushels in 1954 to 20 million in 1958; and for the first 10 months of 1959, truck receipts equaled last year's total. At Toledo, Ohio, truck receipts of grain jumped from 7 million bushels in 1954 to 16 million in 1958. The 10-month total in 1959 was 18 million. Comparable statistics for Duluth-Superior show truck receipts in 1954 of 667 thousand bushels, in 1958 over 5 million bushels, and in 1959 through October, over 19 million bushels. Obviously, total calendar-year 1959 truck receipts at these ports will far exceed 1958 levels.

In our transportation survey, we divided the North Central States into areas; one group of areas was included in the country-elevator phase and another grouping in the terminal-elevator phase. The responses to 1,607 country-elevator interview questionnaires and 93 terminal-elevator questionnaires were analyzed.

Since Government Commodity Credit Corporation grain moves largely by rail, our emphasis in the survey was on nongovernment grain movements in 1958. Unless otherwise indicated, I will be referring to this traffic.

Over 750 million bushels moved in 1958 from country elevators to elevators located on commercially navigable rivers, and over 600 million bushels moved from distances beyond the local areas served directly by the on-river facilities. The 150 million bushels moved from areas near the river elevators indicated an increasing volume, since only 90 million bushels moved in 1956 and 114 million bushels in 1957.

What were the comparative rail and truck volumes in 1958 to the several river markets? To Ohio River markets, 48 percent was by rail and 52 percent by truck; to the Illinois Waterway, Peoria and northward, 62 percent rail and 38 percent truck; to the Illinois Waterway south of Peoria, all truck; to the Mississippi River, south of Davenport, 51 percent rail and 49 percent truck; to the Mississippi River north of Davenport, 76 percent rail and 24 percent truck; and to the Missouri River, 92 percent rail and 8 percent truck.

Some 33 million bushels of grain moved from country elevators by truck to points on the Illinois Waterway, Peoria, Ill., and north, and was potential traffic for barge movement to Chicago and possible rail movement beyond. Also, grain is loaded on barges at Michigan City, Ind., on Lake Michigan, moves into Chicago, and moves outbound by rail on the relatively low proportional rail rates.

Of 668 country elevators reporting railroad rate reductions, 36 percent indicated the reductions have resulted in increased shipments by rail. Only 18 percent of the terminal elevators indicated reduced rail rates have resulted in their receiving more grain by rail, while 6 percent stated that reduced rail rates have resulted in increased outbound rail movements.

The North Central States survey was made in the winter of 1958-59, and reflected only the 1958 grain traffic. Only a limited number of selective rail rate reductions were published in 1958 and many of these became effective late in 1958. Consequently, neither the full effect of these rate reductions nor the effect of subsequent reductions is reflected in our data.

The availability of low-cost water transportation is not the only reason for increased movement of grain by truck. Most important in contributing to the increased truck share has been the long series of rail freight rate increases since 1946. Since World War II, the interstate rail rates on grain, regulated by the Interstate Commerce Commission, have more than doubled. Trucked grain is exempt from ICC rate regulation, falling within the agricultural exemption of Part II of the ICC Act. While truck rates probably have increased some over the years, exact data as to percentage increases are not available.

Into the Southeast, 83 percent of the truck and rail grain volume moves from country elevators by truck. Truck shipments into the Southwest account for one-half of the combined truck and rail grain movement. Into the West, truck shipments account for 56 percent of the total, while into the East truck shipments are about 29 percent.

To all areas outside the North Central States, total rail and truck shipments from country elevators aggregated 160 million bushels in 1958. Corn was 68 percent of the total, and 85 percent of it moved by truck; soybeans was 10 percent of the total, and 29 percent was trucked; wheat was 8 percent of the total, and 22 percent was trucked; grain sorghums was 7 percent of the total, 30 percent moving by truck; oats was 6 percent of the total, 93 percent moving by truck. Barley accounted for 1 percent of the total and 55 percent was trucked. Of the total grain movement from country elevators, 29 percent moved by rail and 71 percent was trucked.

Many of the movements to areas beyond the North Central States involve relatively long hauls. Probably the use of trucks resulted principally from more favorable truck rates.

As was noted previously, the proportion of rail grain receipts at many markets is declining and truck receipts are increasing. A heavy proportion of trucked grain receipts in terminal markets moves from distances of less than 100 miles, although our survey indicates substantial long-haul truck movements into many markets.

To Minneapolis-St. Paul, Chicago, Omaha, Kansas City, St. Louis, Toledo, and Duluth-Superior, 11 percent of the total truck volume originated from distances over 300 miles, while 33 percent of the rail receipts came from over 300 miles. Total truck volume into these markets was about 20 percent of the total rail and truck receipts. Rail volume accounted for slightly over 80 percent.

Nine interior grain markets in the North Central States, not located on commercially navigable water, each received from country elevators over 20 million bushels of grain in 1958. Four additional interior markets received between 10 and 20 million bushels, and another four interior markets received from 5 to 10 million bushels. Decatur, Ill., in the heart of the Illinois grain belt, ranks third in total grain receipts, behind the Minneapolis and Kansas City markets. Decatur had total grain receipts of about 108 million bushels in 1958, 80 percent of which were received by rail.

Out of 1,482 country elevators reporting, 31 percent indicated rail rate increases since 1946 caused them to shift to other forms of transportation. A major segment of the country elevator operators interviewed indicated there has been a gradual shift to truck movement with each rail rate increase, as the differential between rail and truck rates widened and as trucks became more readily available. The shift appears to have become important in the early 1950's, and a large number of elevators indicated a shift to trucks in 1954-55-56, continuing into 1958.

The use of trucks for transporting grain enables the shipper to reach comparatively small feed mills and feeding areas often not directly served by rail lines. Other advantages indicated by country elevator operators are: Smaller quantities can be shipped; often better prices are obtained for grain; delivery time is faster; there is less loss in transit; settlement is faster; and loading and unloading are less expensive.

Many country elevators reporting indicated that the availability of trucks for transporting grain has resulted in significant bypassing of their elevators, and indicated that bypassing has increased in recent years.

The itinerant merchant trucker, who often purchases grain from farmers and trucks it to feeding areas, is playing an increasingly important part in grain marketing.

Service is an important element bearing on increased grain movement by truck. Shortage of railroad cars, poor condition of cars, poor rail claim service and settlement, heavy weight loss, and inaccurate weights by rail were cited. Slow transit and inadequate rail switching service also were mentioned.

To meet truck and barge competition, as well as competition by the Great Lakes-Seaway route, railroads are making selective rate reductions where they believe competition warrants them. To meet the Seaway competition, eastern railroads have reduced rates on grain shipped from Illinois, Indiana, Ohio, and Michigan to North Atlantic ports for export. The railroads reduced these rates by as much as 20 percent, effective June 18, 1959, and provided for routing and transit via Buffalo and other markets. I understand Buffalo rail receipts have increased substantially since these reductions. To meet rate reductions on eastern lines, which also reduced through charges from origins west of the Mississippi River, and to meet truck and barge competition, western lines terminating at ports on the Great Lakes and north-south railroads with Gulf Coast outlets also have made substantial reductions. To counter direct overseas shipments from Great Lakes ports, railroads operating out of Buffalo have reduced rates on grain for export. Numerous point-to-point rail rate reductions have been made or are proposed within the North Central States and from selected origins in these States to domestic destinations. Recent rail rate reductions from river markets to southeastern points are expected to affect grain transportation from the North Central States to these markets.

Selective rail rate reductions between given origins and destinations result in a disruption of the traditional channels of marketing grain. Some markets benefit and others probably are hurt. It appears the railroads are trying to equalize their rates with other modes of transport that are available into these markets, to regain traffic they have lost, and in doing so have departed from the historic pattern of equalization of rates through conventional marketing channels.

The Interstate Commerce Commission appears to be ascribing increasing importance to carrier costs in its decisions. Grain rates, embodying expensive transit privileges and permitting circuitous routings, generally are at levels considerably exceeding out-of-pocket costs. Many economists regard the out-of-pocket cost level as the limit to which railroads would be permitted to reduce their rates. Our analysis of competing carrier costs in the St. Lawrence Seaway study indicated in most cases that there is some room for rail rate reductions on grain before they reach fully-distributed cost levels and a considerable area for reductions before rail grain rates, as a whole, decline to out-of-pocket costs.

The Seaway study also indicated that the barge rate level on grain was well above carrier costs. Barge rates on grain are published by regulated barge lines, but other barge companies, as well as these regulated carriers, participate in the grain movement. Part 3 of the Interstate Commerce Act exempts from rate regulation the movement in one tow of three or less bulk commodities when the tow includes no otherwise regulated traffic. This permits many waterway operators to use toll-free inland waterways and to move freight at unpublished rates which may be considerably below the published rates of regulated carriers. Movement of grain in vessels owned or leased by grain merchandising companies also is increasing. There appears to be a substantial area for the reduction of barge charges should competition necessitate.

Truck rates are usually at levels that cover out-of-pocket costs, plus--the excess being determined by competition from railroads, other grain truckers, and the cost of private carriage. Many truckers hauling regulated commodities in one direction backhaul grain. The rates they charge for backhauling grain are not regulated. Itinerant merchant truckers buy and sell grain and their transportation expenses are taken out of the grain merchandising profits. Many grain merchandising companies own extensive fleets of trucks. To counteract heavy grain backhaul movements by truckers, railroads, in some instances, have reduced their rates on regulated commodities in the opposite direction in an effort to keep the truckers out of the grain shipping areas.

Once investments are made in facilities to handle grain by certain modes of transport, there is a natural reluctance to abandon the facilities. We estimate that over 50 percent of the terminal elevators in the North Central States are equipped to ship grain by truck and 25 percent by barge. Over two-thirds can unload trucks and 10 percent can unload barges.

So far, I have been talking about movements from country elevators. Turning briefly to shipments from terminal elevators, 905 million bushels of non-government grain moved outbound from these markets in 1958. Of these 905 million bushels, about 383 million moved by water carrier and 498 million by rail. The rest, about 24 million bushels, was shipped by truck. Over 42 percent of non-government grain shipments by terminal elevators moved by water. The inland rivers handled 31 percent of the 905-million-bushel total.

Terminal elevators in the North Central States received 21 percent of their trucked grain directly from farmers, 70 percent from country elevators, and 9 percent from others. Total truck receipts were over 407 million bushels.

In summary:

1. Commercially navigable waterways are handling an increasing volume of grain.

2. The rail rate structure encourages truck movement of grain to markets on inland waterways and the Great Lakes.

3. The St. Lawrence Seaway is diverting traffic from eastern railroads.

4. The railroads' participation in total grain movement to major markets is decreasing.

5. The railroads remain dominant in long-haul movements of grain, but truck movement over long distances is substantial.

6. Interior markets, not on commercially navigable water, are important grain outlets.

7. Deficit feeding areas rely heavily on inbound trucked grain.

8. The itinerant merchant trucker is an important factor in grain movement by truck.

9. Grain movements from farms to feeding areas, bypassing established elevators, are increasing in many areas.

10. Although lower truck and barge rates are important in diverting traffic from railroads, service factors also are important.

11. While, at one time, principal domestic consuming areas for surplus grain production in the Midwest were in the eastern and far western States, and the rail rate structure was designed to accommodate these, markets now are extensive in many areas and grain moves in all directions from the Midwest. Low-cost barge transportation and trucks move a considerable part of this traffic.

12. Railroads are reducing rates on a selective basis, disrupting traditional grain transportation patterns, in an attempt to recoup traffic lost to other modes of transport. They are faced with extensive investments in elevator facilities, made to move grain by truck and barge, and with certain service deficiencies, as well as with Government regulatory control.

13. Existing rail and published barge rate levels for grain movement generally are well above computed carrier costs.

14. The grain producer, through the expanded availability of various modes of transport, has alternative markets, and grain merchants are frequently able to reach both foreign and domestic markets that formerly were not accessible competitively.

Because of the rail transit privilege and because railroads are the only mode of transport available in many areas for the volume movement of grain, they should continue to move the greater part of the grain crop to markets. Competition from private carriage and other modes of transport, operating at unpublished rates, will result in further reductions in both export and domestic rail rates on grain. While the rail rates may not sink to out-of-pocket cost levels, we can expect to see substantial reductions in short-haul rates as well as rates for longer distances. The railroads probably will publish more volume rates, more rates at lower levels excluding or limiting transit privileges and circuity, and joint rates with other modes of transport. Reductions to date indicate future rates will be made to meet specific point-to-point competition. A high percentage of rail costs are fixed, and, as traffic volume increases, unit costs will decrease, to the advantage of the railroad and shippers.

Technological changes in barge and towboat equipment and improved navigation facilities can be expected to substantially lower water transportation costs. Various studies indicate that carrier costs on the inland waterways have not advanced proportionately to cost advances for other modes of transport. Tows of 20 to 30 barges, each loaded with 40,000 to 50,000 bushels of grain, will not be unusual on the inland waterways. Movement of bulk flour and feed in barges is a development that can be expected shortly. It seems reasonable to assume that barges will continue to move increasing volumes of grain.

Unless there is a major innovation in highway transportation, as rail rates are lowered trucks will participate less in long-haul grain movements. The increase in weights of truckloads permitted on roads and the use of train trucks--several trailers pulled by one tractor--over superhighways may reduce trucking costs in some areas. Increased trucking of grain to river elevators and from localized areas around lake ports can be expected.

Transportation charges, in many cases, make up 25 to 30 percent of the delivered price of a bushel of grain. To stay in business now and in the future, elevator operators must be alert to transportation trends in their industry. The picture is changing rapidly.

HOW THE GRAIN BANK OPERATES IN INDIANA

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The grain bank is being used widely by feed dealers and farmers throughout Indiana. The Grain Bank basically is an arrangement between the dealer and the feeder whereby the feeder stores various amounts of corn with the dealer and later withdraws an equivalent amount of corn in the form of mixed feed. In some instances, the arrangements include oats.

Grain Bank Advantages

Probably the most important advantage of the grain bank to the farmer is that it saves time for him. This is true especially in hog feeding operations when feed is placed in the hog feeders when delivered. The corn is handled but one time. One Indiana hog producer who uses this grain bank arrangement had over 900 man-work units per man on his farm. This is about three times the man-work units accomplished per man on most central Indiana farms. The manager attributes a large part of the efficiency in his farm operation to the use of the grain bank.

Convenience is another important advantage of the grain bank system. It allows the farmer to use days not otherwise available for productive farm operations to transport corn to the feed mill. Corn can be hauled to the mill at irregular intervals, but feed must be mixed more or less regularly. On the other hand, to get feed delivered to his farm he needs simply to make a telephone call.

An advantage in storage can sometimes be gained by using the grain bank plan. This may be true especially for farmers whose grain storage facilities are in need of being replaced. A good part of their grain storage can be shifted to the local elevator and feed mill, so that construction of additional storage on the farm can be avoided. This arrangement permits funds to be used as operating capital rather than being tied up in fixed facilities.

Grain Bank Problems

Livestock producers face several problems, in addition to paying for the services rendered, when they use the grain bank:

1. Feeders must be large enough to accommodate sizable loads of feed.
2. The likelihood of disease being brought to the farm is increased.
3. The producer will need to plan his feed procurement needs in advance.
4. It is impractical to preserve the identity of corn deposited in the grain bank.

A recent survey by Purdue University revealed that approximately half (378) of the grain and feed handlers in the State have some type of grain bank arrangement. The grain bank seems to be most popular with hog feeders. Of 13,528 grain bank customers, 53 percent used the bank for hogs, 26 percent used it for laying hens, 10 percent used it for beef cattle, 9 percent used it for dairy cattle, and 2 percent used it for broilers and turkeys.

Some of the highlights of the survey are presented under the four following questions.

1. What facilities and agreements are generally associated with the grain bank?

   Some grain bank operations have been set up with little change in existing facilities and handling methods. The setting up of other grain bank operations has included considerable modification of grain storage, bulk supplement and mixed feed storage, and feed grinding and mixing equipment. Limited storage space is a problem to dealers using the grain bank. Out of 378 dealers using the grain bank, 76 percent restrict the size of deliveries of corn, 56 percent restrict total corn stored by each farmer, and 65 percent keep an inventory of corn on hand to meet grain bank obligations.

It appears that dealers make an effort to restrict the rate at which farmers bring corn to them for storage, probably because of limited storage facilities, and at the same time they feel their obligation to keep enough corn on hand to take care of current obligations under their grain bank agreements. Of the dealers who did not try to keep an inventory of corn equal to grain bank obligations, the majority relied upon local purchases of corn to fill these needs. Even though the storage problem seems to be an important one, only 22 percent of the dealers reporting a grain bank operation made a direct charge for storage.

2. What are the important problems connected with receiving grain from farmers in grain bank arrangements?

   In crediting the farmer with grain deposited in the grain bank, the most popular method appeared to be that of giving him credit in terms of pounds of corn. About three-fourths of the dealers made a moisture adjustment for corn received in the grain bank. Nearly half of these made adjustments for quality other than moisture, and about a third of them made an additional adjustment for shrink. Several methods of adjusting for moisture were reported, but the most common one appeared to be that of adjusting to 15½ percent moisture basis. Thus, many dealers using the grain bank apparently make no adjustment for moisture, simply returning corn for corn and reasoning that the variations will average out. Only a very small percentage of the dealers reported that they credited the farmer for his corn on a dollar basis.

   Only about a third of the dealers who have grain bank operations have grain dryers for corn containing high moisture.

3. What specific agreements are used in grain bank operations?

   In grain bank arrangements it is generally understood that the feeder will keep corn deposited with the dealer so that he has some on deposit for most of the feeding year. It is also generally agreed that corn withdrawn from the grain bank will be in the form of mixed feed and that the mixing and the grinding services and supplements added will be furnished by the dealer. However, of the dealers throughout the State reporting that they had some type of grain bank operations, less than 10 percent had written contracts with the farmers. A large percentage of the dealers had understandings with the farmers regarding the maximum corn that could be deposited in the grain bank, but only a very small fraction reported announcing a minimum which they would receive from a farmer.

The understanding with the feeder, whether written or unwritten, usually involves (1) the rate for converting ear corn to shelled corn, (2) the moisture adjustment schedule, (3) adjustment for shrink and other quality adjustments, (4) the policy on overdrawing the corn account, and (5) the charges made for services in connection with the grain bank. Several methods were set forth for satisfying an overdrawn corn account. The customer generally had the privilege of replacing the corn within a limited period at no penalty. However, a common understanding was that overdrawn accounts after certain dates would be charged at the retail price for corn.

As a service to the farmer, many dealers keep a record of mixes desired by individual customers and allow them to place orders by telephone and either pick up the mixed feed at the mill or have it delivered to the farm. About 70 percent of those reporting grain bank operations kept such a record of mixes, and slightly over one-fourth reported that the majority of the feed orders were placed by telephone.

4. How do dealers charge for services they render under grain bank operations?

Storage.--Since only about a fifth of the dealers reporting grain bank operations indicated that they charged for storage, it appears that the majority of dealers make no direct charge for storage. Those reporting storage charges indicated that the most common was 1½ cents per bushel per month. This applied to over half of the dealers reporting storage charges. Several of the dealers made this charge after the first or second month. About one-sixth of those dealers reporting a charge for storage listed it as 1 cent per bushel per month.

Drying.--Charges of 5 cents and 10 cents per bushel for drying were the most common charges. The reported charges for drying, however, ranged from 4 to 12 cents per bushel.

Shelling.--Shelling charges ranged from 2 cents per bushel to 20 cents per bushel, the most common charges being 2, 3, 4, and 5 cents per bushel.

Grinding and mixing.--The most common grinding and mixing charges were 10 cents per cwt., 12 cents per cwt., and 15 cents per cwt. Of nearly 300 dealers reporting grinding and mixing charges, 75 percent reported charges within the range of 10 to 15 cents per cwt.

Hauling.--Usual charge for hauling farmers' corn to the elevator was 5 cents per bushel.

Delivery.--Slightly over half the dealers who reported having grain bank operations owned bulk delivery trucks. Charges for delivery of mixed feed varied considerably, but the most common charge was $2 per ton.

Specific Grain Bank Problems

Storage space.--Many elevator managers suggest that limited space is their main problem. This requires that they put some type of limitation upon the size of deliveries of corn by the farmer and upon the maximum amount which he can store with them. Some elevators will not accept corn for storage after certain specified dates because of the need for storage space for approaching new crops.

Overdrawing corn account.--Farmers are prone to overdraw their corn accounts, especially late in the season, and some hope to repay the overdraft by furnishing new corn. When this occurs, it generally means that the elevator is then furnishing corn that is higher priced than the corn which he will receive in return after harvest. This problem is generally handled by establishing a policy of notifying the farmer when he is overdrawn, and then allowing a short period of time (10-15 days) to make sufficient deposits of corn to cover the overdraft.

Quality problems.--Corn delivered for deposit in the grain bank is frequently not of storable quality. Such corn must be processed and fed within a relatively short time, sold at a discount and replaced, or artificially dried before storing. Since farmers usually expect good-quality corn in the processed feed, the elevator must provide the replacement or drying service. Receiving high-moisture corn necessitates the application of appropriate discount schedules in arriving at the proper credit allowed to the farmer. Also, if the farmer agrees to use high-moisture corn in his processed feed, then credit is usually allowed according to the same schedule at which the high-moisture corn is discounted.

Even though many problems are connected with the offering of grain bank services, it is aparent that many farmers are willing to use these services and to pay for them. The elevator manager has a responsibility to help the farmer understand the problems connected with grain bank services as well as to inform him of the advantages of using them. When the elevator manager does a good job of educating farmers in his community about the grain bank, he will likely see an improvement in farmer cooperation as well as increased use of, and satisfaction with, grain bank services. Even though the purchaser of goods or services wants them at the lowest possible cost, he is usually willing to pay a charge which is in line with the amount of services rendered.

EFFICIENCIES IN THE OPERATION OF CUSTOM FEED MILLS

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The very foundation of our economy is based on the profit motive. So often we are prone to clothe this motive with such shrouds as "efficiency," "service," and so forth. However, the only real reason that an individual or a firm enters the custom feed milling business (or any other business, for that matter) is to make profits. Rendering service and effecting efficiencies are means of attracting more customers and earning more profits. A well-operated custom mill is truly an asset to its community; and a poorly operated mill is just as truly a liability. A well-managed mill can contribute appreciably to the welfare of its individual patrons while exacting an honest profit by giving plus values for all services rendered and supplies sold.

In my opinion, a custom feed mill is an organization which processes the farmer's grain and adds to it the adequate supplements, minerals and medications to make a balanced feed, for a service fee plus the sale of the supplemental ingredients. I doubt, however, that such a simple business structure can be found in North Carolina, or in your State either. More often custom feed milling is a department within a larger farm service and supply organization. We shall limit our discussion primarily to the custom feed milling phase of these businesses.

Pursuing the profit motive, the following areas should be given thorough consideration by persons starting a new custom feed mill or evaluating the operation of an existing mill:

1. Scope.--The purpose of a custom feed mill and its size should be evaluated both in the light of the immediate future and over a long-range period of time. Will the mill process a complete line of feeds? Or process only broiler mash? Will one type of feed be discontinued in the foreseeable future? In determining the size and purpose of the operation, it would be well to consider the following:

   a. The extent and type of livestock enterprises in the area.
   b. The extent and types of grain production in the area.
   c. The type of farm storage and transportation in the area.
   d. The availability of capital (or credit).
   e. The number of competitors.
   f. Affinity of feed milling for other businesses currently engaged in (or contemplated).
   g. The long-range projection for significant changes in any of the above.

2. Management.--Strong, positive management, as you well know, is a must for a successful business. Whether management is to be proprietary or hired, one person should be given the sole responsibility for planning and directing the affairs of the business. He must be given the commensurate authority to accomplish his job. This is true of all successful operations. In the Army there is a single leader for every element of command from the squad to the army group. A commander may have a large staff to assist him, but the sole responsibility for decisions is his.

It has been my observation, however, that far too many managers of custom feed milling operations feel that their success is dependent upon the number of manual skills that can be acquired incident to the daily function of the business. In my opinion, no greater proficiency should be expected of management than skill in directing and planning. Ability to drive a truck better, change screens in a hammer mill faster, and make out a ticket more legibly than anyone else in the organization does not make a good manager. If a manager has learned such skills, in the process of acquiring leadership, it is to his advantage in directing others and "pinch hitting" in emergencies, but perfecting these skills is not a function of management.

3. Personnel.--An adequate number of qualified personnel should be acquired to perform all tasks incidental to the business. Inadequate numbers of good employees or hordes of unskilled laborers are both most ineffective. Each employee should be assigned definite areas of responsibility. Each employee should be given adequate training to accomplish his assigned tasks. Should management not possess the detailed knowledge necessary for training new personnel, outside help should be solicited. Equipment manufacturers, major feed companies, and sometimes governmental agencies have representatives capable of providing training. Where such free services are available, they should certainly be utilized. Teamwork among the crew members is most essential. Without it smoothness of operation will never be realized. Inspiring the crew to work as a team is one of the intangible qualities of leadership.

4. Building and equipment.--Secondary to management, facilities are perhaps the next most important factor requisite to successful operation of a feed mill. Capital is often a limiting factor in obtaining the desired plant. But in planning a new operation or renovating an existing one, it is wise to strive for the following in building design:

a. Simple, straight lines.
   (1) Straight walls are cheaper than corners.
   (2) Cleaning is easier.
   (3) Lend themselves to straight-line work flow.

b. Single level insofar as possible.
   (1) Ease of operation.
   (2) Ease of supervision.

c. Building designed to house necessary equipment.
   (1) Adequate work space around each piece of equipment.
   (2) Adequate aisles for transportation.

d. Building and equipment layout should be planned to permit future expansion if desired.

e. Local building ordinances, fire insurance company regulations, and any other applicable codes and regulations should be adhered to. There are many, many efficiencies to be effected through the proper use of equipment. Each machine should be considered separately and in conjunction with other equipment. The cardinal principle to be followed is to synchronize the size and capacity of all machines so that no one piece of equipment forms a bottleneck to the orderly flow of materials through the plant. A 1,000 bu/hr. capacity machine cannot function at optimum efficiency if it is fed by a 500 bu/hr. elevator or screw conveyor, for instance.

Maintenance of equipment is a sadly neglected area of operation in far too many plants. Lost production time and costly major repairs are too frequently the price that is paid for this negligence. Systematic, scheduled maintenance is the only solution. Responsibility for maintenance must be specifically assigned. If this is merely assigned to the crew in general, it will never get done. If the operation is large, maintenance and lubrication of equipment can be the task of one individual. In smaller organizations, all members can be assigned the upkeep of given machines so that every piece of equipment has a keeper.

Appended to this paper is a listing of considerations that we have observed to be desirable in the location, arrangement, and operation of various items of custom feed mill equipment.

5. Housekeeping.--An orderly house is indicative of an orderly business. Furthermore, good housekeeping lessens fire risks, aids and contributes to maintenance, and bolsters employee morale. Just as in the case of maintenance, housekeeping will not get done by itself. It must be systematic; it must be part of the daily routine.

Housekeeping should include care of premises, sanitation, and fumigation of grain stocks. Insects and rodents destroy the most nutritive part of whole grains and leave the residue contaminated. Infested and contaminated grain cannot be expected to produce a wholesome and nutritive feed. It is simply good business to practice good sanitation as a protection against insect and rodent infestation and contamination.

6. Education and public relations.--A lot has been said about public relations, but it is a subject that cannot be overemphasized. Public relations should be stressed all the way from greeting a customer with a cheery but sincere smile to educational selling. Having good management, well-trained personnel with definite assignments, and well-planned building and equipment with good maintenance and housekeeping should create an atmosphere in which employees are cheerful. But that is just a start. Customers of custom feed mills, more than many types of customers, are apt to seek services which are really to their detriment. It is easier to prepare an unbalanced feed that a customer requests than it is to "sell" him a balanced feed. But the custom mill has a moral, civic, and economic obligation to exert every reasonable effort to persuade the customer to buy the balanced feed. Improper feeding of the customer's stock will prove uneconomical not only to the customer but, in the long run, to the mill and the community as well.

In order to properly advise the customers, the mill employees must have a working knowledge of animal nutrition. Land grant colleges and major feed companies have this information available, and it is being constantly added to by research findings. It is the responsibility of management to obtain this information, and with it to further the education of the mill employees and the mill's customers. Some ingenuity and judgment must be exercised in obtaining, assimilating, and disseminating educational materials.

The mill and its employees should also be civic minded. I do not mean merely attending meetings with the obvious purpose that it is good for business. Employees should be encouraged to participate in those community affairs in which they are genuinely and sincerely interested. As the individuals of the firm accept their place in community affairs, so will the community accept the business.

7. Transportation.--Accessibility of a custom feed mill from roads and railroads is a known must. Traffic routing of vehicles on the mill premises should

also be carefully planned. In addition, internal traffic must be routed as orderly and economically as possible. Products should be moved mechanically rather than manually at every opportunity. You have, no doubt, all seen feed mills where the products had to be lifted by hand numerous times between receipt and outloading. Such practices should be avoided.

All of the above would indicate that good management and utilization of all available resources should make the custom feed mill business a profitable operation. Now, what can we as employees of State departments of agriculture do to foster such profitable operations? I would list the following as possible areas of assistance. Some of them may not be applicable in every case because of legislative, personnel, or other limitations. However, from this list a number of areas of assistance may be devised.

1. Make economic surveys.
2. Assist in development of plans and mill layouts.
3. Maintain equipment exchange files.
4. Maintain a personnel file.
5. Keep abreast of equipment design and capabilities.
6. Encourage trade organizations.
7. Counsel on mill planning.
8. Assist in conducting schools for operators.

Steps in Making an Economic Survey

1. Determine available market
    - A. Define market area
    - B. Determine livestock census
        - (1) County agent
        - (2) Crop Reporting Service
        - (3) Personal survey
        - (4) Livestock markets
    - C. Determine grain production
2. Compare production to requirements
3. Determine grain storage (farm and commercial)
4. Evaluate competition
5. Determine services needed
    - A. Portable mill
    - B. Grain bank
    - C. Custom grinding
    - D. Contract production
    - E. Establishment of a market for given type of livestock
6. Estimate of capital needed.

CONCLUSIONS AND RECOMMENDATIONS

of Grain and Seed Work Groups

The group pointed out that the presence of crotalaria, a leguminous seed toxic to poultry and livestock, in grain and processed feed and soybeans is creating a marketing problem for these commodities. The grain trade and feed manufacturers are refusing to buy grain in which crotalaria is present. This problem is more serious in the Southeast where this legume is used for soil building purposes and is approved under the ACP program. The work group recommended that the State agencies working through their farm and trade organizations request (1) that the U. S. Department of Agriculture temporarily remove crotalaria from the list of approved soil-building crops, and (2) that the Food and Drug Administration initiate an immediate study of the toxicity problem to determine the need for regulatory controls.

It was recommended that the State departments of agriculture promote the merchandising of grain and soybeans on the basis of grade at origin, subject to appeal if terminal grade differs from origin grade. Marketing specialists should show grain facility operators the importance of determining grain quality before shipping. This information would help these operators select markets according to grade and price.

Grain dealers report serious difficulty in preventing deterioration and losses in corn harvested at high moisture content (25 percent and above), as recommended by equipment manufacturers for maximum efficiency in operating modern harvesting equipment. This problem is particularly acute in areas where harvesting is done under high temperature conditions. The group recommended that appropriate agencies should undertake research to determine the measures necessary to solve the problem, and that State department of agriculture grain specialists should advise producers how to reduce the hazard from high moisture content.

There is a growing interest in many grain areas in improving the accuracy of moisture meters. The group cautioned against instituting such a program on a mandatory or regulatory basis, since there is no standard that can be legally established as a base to check moisture meters. It is possible, however, to develop a voluntary program which will be beneficial to producers and marketing agencies, by using manufacturers' standards and possibly a Federal inspection meter as a standard. In the meantime, the group recommended that the U. S. Department of Agriculture and the National Bureau of Standards develop standards and procedures for using grain moisture meters which can be accepted.

Clean grain is essential for successful and effective marketing. It was recommended that each State consider the following actions in regard to a clean grain program:

1. Accelerate existing programs.
2. Expand the programs to include all grains.
3. Appoint statewide committees composed of representatives of interested State and Federal agencies and farm and trade groups to serve as a steering committee for promotion of the program.
4. Disseminate information on effective control measures for preventing contamination.

Incorporation of more objective measures of quality into the official U. S. grain standards was recommended. Some of the objective tests that have been developed and should be considered for this purpose are:

1. Sedimentation test for determining the potential bread-baking quality of wheat gluten.

2. Oil tests for use in determining quantity and quality of oil in soybeans and flaxseed.

3. Fatty acid test for use in determining the free fatty acids (which is in close relationship to the degree of soundness) in grain.

4. Some type of objective test to measure breakability of corn, especially artificially dried corn.

Research should be continued to improve these tests, and to develop tests that are practical for grain inspection work. Studies should be intensified to develop more satisfactory equipment and methods for sampling grain for inspection purposes. Consideration should be given to lowering the limits within grade for grading factors, particularly for foreign material in such grains as corn and grain sorghums. Closer and more effective supervision by the U. S. Department of Agriculture of grain grading, to improve accuracy and decrease intermarket differences in grades, was urged by the group.

It was recommended that States not having a seed marketing service program explore the possibility of initiating and developing such a program, and those with seed marketing programs use the services of State seed laboratories such as the Mississippi State University Seed Technology Laboratory in the following types of activities:

1. Assistance to processors in selecting seed cleaning and handling equipment.

2. Assistance to seedsmen in selecting the screens and type of machinery needed for specific cleaning purposes.

3. Training of marketing specialists in seed marketing service work.

It was further suggested that the State departments of agriculture work closely with such groups as the North Central Grain Marketing Technical Committee, Southern Grain Marketing Technical Committee, Land grant colleges (research and experiment stations), U. S. Department of Agriculture, and the Tennessee Valley Authority in studying transportation rates and charges and the basic carrier costs of the various modes by which grain and grain products are transported. The group felt that these studies should be on a marketing or regional area basis. Consideration should be given by the agencies developing the program to employing a regional grain marketing specialist to coordinate a regional grain marketing and transportation study. It recommended that a study be made of the effects of changing transportation rates on interior processing plants, including soybeans, and that the Commodity Credit Corporation or other appropriate Federal agency study the feasibility of utilizing to a greater extent all modes of transportation for the shipment of grain.

In order to assist producers and grain elevator operators in organizing grain banks, State marketing specialists should make available information on the methods of operation and the mechanics of the grain bank. Based on the

Indiana experience, there are some important economies, including lower labor costs, that may be derived from this plan by producers and grain handlers. Trade associations are encouraged to sponsor and promote policies that will assure that grain bank operations are equitable to all concerned. This may help to avoid controversies that would necessitate regulations.

State departments of agriculture are encouraged to assist in solving cost and efficiency problems which take into consideration the size of operation, organization, plant layout, and equipment in custom feed mills, grain elevators, and seed processing facilities.

LIVESTOCK

Work Group Sessions

MEASURING BEEF QUALITY

D. M. Doty, American Meat Institute Foundation

In any discussion of quality, it is well to define what is understood by this term. As it relates to fresh beef, quality may be defined as the summation of the distinctive traits or special features that determine the ultimate acceptability of the product to the consumer. It is apparent that quality factors of beef include the characteristics that apply to raw beef as well as those influencing the total palatability of the cooked product. Quality factors influencing the appearance of raw meat include color of lean, color of fat, and firmness. The palatability characteristics include tenderness, juiciness, aroma, and flavor of the cooked meat.

When one undertakes to evaluate quantitatively the appearance factors contributing to quality, it is immediately apparent that many difficulties can be encountered. Lean color of raw meat can be estimated by extracting the pigment and determining the amount in the extract by spectrophotometric methods. Also, one may measure lean color by using various types of color comparators. Color of fat may be estimated with the use of comparators or by extraction and spectrophotometric evaluation of the carotene pigments in the extract. Firmness of raw meat can be satisfactorily estimated by subjective techniques only. It must be admitted, also, that subjective evaluation of color of fat and lean is perhaps just as satisfactory as the more precise objective measurements.

The palatability factors determining quality of cooked meat can be best estimated with the use of a taste panel. While mechanical methods have been proposed for measuring tenderness, and various techniques such as expressible fluid have been used to measure juiciness, they are sometimes not well related to taste panel scores. Many investigations are now under way to determine the flavor and aroma components of cooked beef, but results as yet are quite preliminary.

The factors which contribute to quality of beef can be roughly separated into those properties which are dependent upon the history of the animal and those properties which can be evaluated from the meat after slaughter. Animal characteristics that influence beef quality include age of the animal, the genetic background, the particular feeding regimen, and treatment of the animal immediately prior to slaughter. Those characteristics of meat which have been suggested as influencing quality include marbling (intramuscular fat), the overall histological structure and organization of the tissues, and the amount of connective tissue which is present.

It is difficult to determine precisely the contribution which each of the factors mentioned makes to the overall quality of beef. It is generally recognized that meat from young animals is more tender than that from older animals. It has been definitely shown that meat from some strains of animals is more tender than that from other strains subjected to the same management and feeding practices. In general, also, those animals which have been finished with drylot feeding will produce more tender beef than animals which have been finished on pasture alone.

Some investigations have shown that the degree of marbling is closely related to tenderness and juiciness of the cooked meat. Other investigations have failed to show this relationship. In the same way, some researchers have reported that tenderness is inversely related to muscle fibre diameter. Other investigations have not confirmed this conclusion. For aged animals of relatively low quality characteristics, the amount of collagen in the meat is related inversely to the tenderness of the meat.

There is much current discussion about the relationships of U. S. Government grades to quality of beef. This relationship is extremely difficult to establish or to deny, because one is immediately faced with questions such as what cut of meat is to be used, and how is the cut cooked? Most of the research attempting to relate U. S. Government grade to beef quality has been done on cooked longissimus dorsi muscle from either the loin or rib cut. In these studies, it has been definitely shown that there is a correlation between grade and tenderness. This correlation is small but significant. Investigations in our laboratories show that the longissimus dorsi from broiled rib steaks from Prime grade animals is slightly but significantly more tender than the same muscle from Good or Commercial grade animals. The same general trend has been shown between U. S. grade and juiciness of the cooked meat. Our studies showed that the ribeye from lightweight Good grade carcasses was less juicy than that from heavy Good, Commercial, and Prime grade carcasses. Ribeye from Prime grade carcasses scored slightly higher in flavor than did that from Good or Commercial grade carcasses.

When all of the data available are considered, it appears that U. S. Government carcass grade does provide some indication of beef quality, but the relationship between grade and quality is not close, particularly in the lower grades. It should be emphasized, however, that our present knowledge of the properties of beef that influence tenderness, juiciness, and flavor is inadequate for the development of more objective techniques for the rapid, accurate evaluation of quality.

WHAT DO CONSUMER PREFERENCE STUDIES SHOW

V. J. Rhodes, University of Missouri

Modern consumers want beef which is uniformly tender, tasty, and lean. They want all three--tenderness, leanness, and tastiness. When we preference researchers made such a report just 4½ short years ago, 1/ there was much gentle chiding about these consumers with their impossible goals.

In the last 4 years, we have clearly demonstrated that a tremendous amount of lean, tender, and tasty beef is already being produced. Moreover, researchers concerned with the beef animal and the beef carcass have set themselves to the task of breeding, feeding, and processing an ever-increasing proportion of lean, tender, and tasty beef.

Many livestock men are currently pointing out the increasing uniformity of beef as more steers and heifers are being fed, as weights and length of feeding become more standard with the emphasis upon youth, and as better breeding becomes more common. While we are obtaining more "external" uniformity, we are still quite a way from the ideal "internal uniformity" desired by the chainstore buyer, namely carcasses which are "carbon copies" of each other in tenderness, leanness, and tastiness. Uniformity in appearance or finish does not necessarily give uniformity in eating qualities, although there is evidence in recent years that we may be obtaining more uniformity in eating qualities.

In a consumer acceptance study of short loins from 84 cattle eaten by a panel of 266 St. Louis families, 10 steaks from each loin were eaten under normal household conditions by 10 adults. These steaks were cooked and eaten as part of the regular household routine. Each person rated the steak on a chart as to how well he or she liked it. We changed word ratings to numbers with 1 given to "Like Extremely," 2 to "Like Very Much," and so forth. The average rating of each loin was computed and placed on a chart for easy comparison. It was noted that 64 of these 84 loin ratings were in the very acceptable range of 2 to 4 on our vertical scale. But there were a few (5 out of 84) which were not acceptable to consumers as they had ratings below 5. It is the job of a good sorting system to sort out these few poorer beef animals from our supply. This is the job of any sorting system, whether it is managed by Federal graders, packers, or retailers.

How good are we at sorting beef as to eating qualities? Federal grades are the most used system of sorting.

In our study we found that, without exception, Prime and Choice beef loins were all quite acceptable to consumers. These two grades give us a high degree of assurance of eating quality. However, these grades are "oversafe," because they exclude a lot of loins which are just as acceptable to consumers as those

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1/ *Meat and Food Merchandising*, March 1955, "Are Consumers Getting the Beef They Want?"

included. About 2/3 of the loins called Good were just as acceptable as those called Choice. Moreover 1/3 of the Standard loins had the eating quality of Choice. [2]

Now you see the reason for my earlier statement that we have demonstrated that there is a tremendous amount of lean Standard and Good beef being produced already which is not only lean but also tender and tasty. Let me assure you that these results are no fluke. We conducted a similar experiment in Columbia with pairs of loins from 56 Standard, Good, and Choice cattle with about the same results. [3] Early this year we tested 140 Good short loins with only 4 falling below a mean rating of 4.0. Does it make sense to throw 140 loins into a lower grade in order to keep 4 loins out of Choice?

Other researchers are obtaining the same results. Cover, of Texas, has reported a similar overlap of laboratory panel evaluations of Good and Choice. [4] Cover recently made these striking statements: ".....it is doubtful that fatness by itself is responsible for a marked increase in tenderness and juiciness. It is disconcerting that something which has appeared so obvious to so many for so long should be so extraordinarily difficult to prove in the laboratory." [5]

Small consumer tests in Tennessee [6] and California [7] show the same general overlapping of Choice and Good. In fact, I have never seen any results which indicate the contrary. There are some laboratory panel results which show the average of all Choice to be slightly higher than the average of all Good. However, averages largely miss the point, because consumers buy individual cuts, not averages, so we need data on individual carcasses--on many more individual carcasses than ordinarily are included in any laboratory test. I might also add that we have never been able to obtain a good relationship between laboratory and consumer ratings of individual loins.

There is the suggestion in the brief descriptions of today's program that some of these consumer findings are controversial. These results do disagree with some ideas about the relationship of grade or fatness to palatability. I have often asked myself just why so many people believed for such a long time that most Choice cattle were better than most Good cattle and that Prime cattle had them all beat. I know that this old belief was not based upon published research. While there are a few experiments showing so-called higher grades to have a little better acceptability on the average, almost all evidence in the past is entirely consistent with our present research. For example, back 20 years ago, Hankins and Ellis summarized the monumental "Cooperative Meat Investigations" of the tenderness of 728 cattle with this statement, "The evidence is strong that variations in tenderness are caused mainly by factors other than fatness." 8/

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[2] V. James Rhodes, Elmer R. Kiehl, D. E. Brady and H. D. Naumann, Predicting Consumer Acceptance of Beef Loin Steaks, Mo. Res. Bul. 651, 1958.

[3] V. James Rhodes, "The Variability of Consumer Preferences," Journal of Farm Economics, August 1959.

[4] Sylvia Cover, G. T. King, and O. D. Butler,"Effect of Carcass Grades and Fatness on Tenderness of Meat from Steers of Known History,"Texas Exp. Sta. Bul. 889, March 1958.

[5] Sylvia Cover, et.al., "The Relationship of Fatness in Yearling Steers to Juiciness and Tenderness of Broiled and Braised Steaks," Journal of Animal Science, 15:471 (1956).

[6] J. W. Cole, et.al.,"Consumer Preferences and Organoleptic Studies as Related to Federal Beef Grades and Selected Beef Carcass Characteristics," Journal of Animal Science, 16, 4, 1074.

[7] Marion Simone, et.al., "Effect of Degree of Finish on Differences in Quality Factors of Beef." Food Research, 23:32-40, 1958.

I rather suspect that many ideas about grades and palatability stem from the long-ago discovery that a well-bred and well-fed beef animal produced a much better carcass than an old, utility critter. But it's a mistake to compare today's Good and Choice animals of the same age and breeding and conclude that there is a big difference in consumer acceptability because one is fatter than the other. Some people think that if a little medicine is good, then lots of medicine is better. Too many people have made the same mistake about fat as an aid to palatability.

About two years ago, we concluded that: (1) Prime is too wasty to worry about any more, (2) Good grade needs to be thoroughly compared with Choice. Therefore, we have designed an experiment which is still under way. During the course of that experiment we expect a panel of 200 St. Louis families to test over 500 short loins of Good and Choice grade. We expect to have a definitive comparison of Good and Choice by thirds of a grade and by seasons of the year. We have already tested over 400 cattle, and preliminary analysis indicates that a chainstore buyer who pays a premium for average or low Choice over high Good obtains extra fat but precious little extra in the way of palatability as his customers measure palatability. In the preliminary results on 60 high Good and 60 low Choice short loins out of the same weight of cattle, and graded by Federal graders, only 3 out of 120 loins had ratings below the danger line of 4 and only 9 had ratings of 3.5 or below. Those 117 loins were fine eating beef, but 60 were thrown out of Choice when only 2 deserved such treatment.

But the fatness idea dies hard. Recently I noticed a comment in one of the breed magazines about consumer preference research. This magazine writer assured his readers that there is no such thing as lean beef that is tender and tasty.

If these are the preference results, then so what? What relevance do they have to the livestock industry and to you men here? I'm sure that many of you have already drawn some conclusions about that. Let me make a few suggestions.

We are lucky that we don't have to have fat to get good eating quality, because it gives an opportunity to present to the consumer excellent beef unhandicapped by fat. Therefore, as an industry, we need to do all we can to encourage the breeding and production of high-quality, lean beef.

I would give a solid plug to a much greater emphasis on carcass contests at shows and fairs. Then I would hasten to add that these carcass contests need to be realistic. I am intrigued by the carcass contest recently described by O. D. Butler of Texas A. & M. The carcasses are not only evaluated by U. S. standards but are also evaluated as to yield of trimmed cuts and as to tenderness.

8/ O. G. Hankins and N. R. Ellis,"Fat in Relation to Quantity and Quality Factors of Meat Carcasses," Proc. Am. Soc. Animal Prod. 32:314 (1939)

9/ National Provisioner, Jan. 31, 1959, pp. 15 and 16.

There will be some eyebrows raised the first time a tender, high-yielding Good grade carcass is made grand champion of a carcass contest. But if we are going to keep on using our shows and contests as educational tools, then they must keep on adjusting. We have made tremendous adjustments in our show standards since the days when the 3,400-pound Durham ox was shown all over England. We have come a long way, but there is no reason to think that we are at the end of the road.

I seriously considered how much I should say about live and carcass shows. It's an area with a proud tradition and lots of sentiment. Instead of my saying any more, let me recommend that you read in the National Provisioner of October 10 the speeches of the various retailers and packers at the recent AMI convention. I was amazed at how many strong statements there were for lean, tasty beef, and how strong suggestions there were concerning better recognition of such beef in our cattle and carcass shows.

We have seen performance testing and interest in meat-type animals become very strong in the hog industry. Now we are seeing a similar development with beef. Preference researchers would heartily endorse this movement with its potentiality for producing greater uniformity and greater productive efficiency in our cattle and more uniform palatability in their beef.

E. J. Warwick at the recent "Beef for Tomorrow" meetings here at Purdue indicated some of the genetic improvements possible. Improvements of 5 to 10 percent in economic traits such as weaning weight and daily rate of gain are attainable within a decade with proper selection. Somewhat smaller concurrent improvements in tenderness and areas of the rib eye are also obtainable. A faster rate of improvement is possible in any one area if selection emphasizes it over other characteristics. 10/

We need to see more openmindedness and experimentation on the part of our retailers and institutional buyers. Willard Williams has reported that about 4 times as much low Choice as high Good is being rolled with the Federal grade. 11/ In view of the minute palatability difference in those two grades, one wonders if many retailers are simply merchandising the grade name, U. S. Choice. Perhaps high Good should be included in Choice as some are suggesting. I'm certain that more retailers need to sell beef on its merits regardless of its grade tag. The growing popularity of Good grade and the declining popularity of Prime suggests that some retailers are beginning to move.

I should mention the large amount of research being done by many different researchers in the area of improving beef and beef identification. Tenderness can be improved by aging and by enzymes. Both methods show promise, but neither appears to be the whole solution which can eliminate that occasionally tough carcass. I am confident that methods will be developed to identify that problem carcass so that we can either improve it or run it through the meat grinder.

We are within sight of our goal of beef which is uniformly acceptable to consumers in terms of all characteristics. We must not be sidetracked by old traditions or by sideline issues. No industry can afford to spend high-priced resources in producing for the tallow barrel.

10/ E.J.Warwick, "Genetic Aspects of Production Efficiency in Beef Cattle," paper presented at Beef for Tomorrow Conference, Purdue, Oct. 20, 1959.

11/ Willard Williams, et.al., Economic Effects of U.S. Grades for Beef, USDA Mkt. Res. Rept. No. 298, 1959, p. 45.

VIRGINIA'S PROGRESS IN MARKETING LEAN-TYPE HOGS

Howard R. Beck
Virginia Department of Agriculture and Immigration

Hog grading is centralized in our biggest hog producing area, southeastern Virginia. The first step made in this area was the placing of trained hog graders in plants of the State's largest packers of pork products. It was the duty of these graders to grade each individual hog in accordance with official grade standards.

First, I shall discuss why hog grading was needed in this area. Before hogs were graded, they were bought strictly on the weight basis at these plants, with hogs weighing 180 to 240 pounds bringing top prices. It was not at all unusual for buyers and farmers to seek an average weight by selling light hogs with heavy hogs. This method of marketing held no incentive for a farmer to produce No. 1 hogs or for the packer to pay premium for the top hogs. With the start of grading, the farmer with quality and weight got paid accordingly.

During the past 2 years, some 358,456 hogs have been graded at these plants. These hogs were graded out in the following percentages:

	Number	Percent
No. 1 *	165,833	45.75
No. 2 *	93,610	26.93
No. 3 *	19,215	5.30
Medium	6,825	1.88
140-160	17,005	4.69
160-180	32,463	8.96
240-270	18,366	5.07
270 up	5,139	1.42
TOTAL	358,456	100.00

Application of grade standards has paid farmers more money. The farmer with quality is paid a premium for hogs which Grade No. 1. This premium has amounted to approximately 50 cents per hundredweight for No. 1 hogs. In a case where a farmer has approximately 50 percent No. 1 hogs, you can see where he would come out dollars ahead in this method of selling as compared to selling hogs on an ungraded basis.

It has taken a lot of hard work to make this program successful. Grading has created problems which have shown a need for an educational program directed at both buyer and seller.

The first thing that needed to be done was to make the farmer quality conscious. This was done by encouraging farmers to work with graders while their hogs were being graded so that they would know the type of hog that would make the No. 1 grade. Correlation programs to check the grader's accuracy between

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* 180-240 pounds weight group.

live and carcass grade were carried on to convince farmers and packers that grading can be done accurately and is a fair way, to both producer and buyer, to buy hogs.

Following is the live and carcass grade correlation for the fiscal year 1958-59:

Grade	Total hogs	No. 1	No. 2	No. 3	Medium	Percent
No. 1	1166	997				85
No. 2	699		560			80
No. 3	148			128		86
Medium	23				20	87
TOTAL	2036	997	560	128	20	84

A great aid to the overall program was the introduction of a swine marketing agent to the area. One of the first services the marketing agent endeavored to perform was to inform farmers on what they could expect their hogs to grade. This was done by holding grading demonstrations with farmer groups and county agents in areas of production. Often farmers requested individual on-the-farm estimations of grades and weights. The marketing agent was able to render this service and at this time aid farmers in selecting market hogs as they became of market weight. In cases where the farmer was dissatisfied with the way his hogs graded, the marketing agent visited his farm to explain why his hogs graded as they did. He often invited the farmer to visit the packing plant and look at his hogs in the cooler. It was very easy to show him why his hogs did not make the No. 1 grade, and also to point out the type of hog it took to make a No. 1.

During the past year, another program has been introduced in this area. The livestock and market expansion sections have drawn up Tentative Virginia Feeder Pig Standards, and feeder pigs are being sold through sales where pigs are being graded individually by livestock graders using these standards.

Pigs are sold in pens of uniform weight, size, color markings, and quality. Ownership is intermingled, making the pens larger and the sale smoother and more successful. Each sale is organized and controlled by a sponsoring organization of producers assisted by the swine marketing agent and county agents.

The marketing agent has been instrumental in introducing feeder pig sales in eastern Virginia. By working with organized farmer groups, county agents, and the livestock grading section he has organized feeder pig sales in two areas of eastern Virginia. In the past year, 7,121 pigs have been sold through these sales.

Grand Totals

No. of pigs sold	Ave. lb. per head	Total lb.	Ave. Price per head	Total price	Ave. pr. per cwt.	Per-cent
No. 1 feeder						
3,561	66.88	238,160	$17.77	$63,294.74	$26.57	50.00
No. 2 feeder						
2,793	66.06	184,506	16.43	45,908.95	24.88	39.22
Medium feeder						
686	53.31	36,577	10.91	7,489.80	20.48	9.63
No. 3 feeder						
81	59.5	4,820	12.91	1,046.29	21.70	1.13

Price differences

	Per head		Per Cwt.	
No. 1 feeder	$17.77		$26.57	
No. 2 feeder	16.43	- $1.34	24.88	- $1.69
Medium feeder	10.91	- 6.88	20.47	- 6.10
No. 3 feeder	12.91	- 4.90	21.70	- 4.87

These organizations draw up regulations governing the feeder pig sales which include sanitary and health requirements, weight limits, and numerous other rules to make these sales run smoothly. It is the duty of this organization to enforce these rules.

Feeder pig sales are booming in eastern Virginia and are moving into other areas of the State. It appears that by the end of this year, there will be organized sales in five areas in the State.

In summary, I would like to say that we feel that State livestock grading has proved practical for hogs as a system of merit buying. The application of grade standards has paid farmers more money, and has created problems which show need for intensified educational programs with buyers and sellers.

RESULTS OF LEAN PORK PROMOTION IN INDIANA

James H. Stevenson, Purdue University

If consumers want leaner pork, will they buy more of it at the same price as regular pork? Will they pay more for "meat-type" pork than regular pork?

These are two of the more important questions we have been attempting to answer in our two projects entitled "Marketing Meat-Type Hogs and Pork as Differentiated Products" and Economic Analysis of Merchandising Differentiated Meat-Type Pork Products at the Retail Level."

In each project, three Indiana firms cooperated to measure consumer reaction to meat-type pork at retail. A hog buyer supplied live-graded meat-type hogs to a packing plant which paid 50 cents per hundredweight over the current market price. The packer killed the hogs separately and regraded the carcasses. Rail grading eliminated "counterfeits", or "meatless wonders", and overly fat hogs. Loins were observed individually after the carcasses were cut up; substandard loins were sorted out. The five primal cuts, loins, Boston butts, picnics, hams, and bellies (in the form of bacon), were shipped to nearby food chains to be used in the program.

In the first test, which took place in Muncie, Ind., meat-type pork cuts and regular pork cuts (the normal packer run) were sold at the same price. The sales of five stores which handled only meat-type pork, labeled "Tend-R-Leen," were compared with sales of five stores which handled only regular pork.

In this test, meat-type pork shoulders outsold "regular" pork shoulders by 5.6 percent. Nine percent more meat-type bacon and 13 percent more ham were sold. However, meat-type pork loin cuts sold no better than regular loins. All cuts considered, meat-type pork sales showed a comparative increase of 6.1 percent over regular pork.

Thus, certain meat-type pork products seem more desirable from the consumer's point of view than other meat-type pork products. In the case of pork loin cuts, such as center cut chops and loin roasts which can be trimmed, consumers showed no preference for the meat-type pork. For cuts such as bacon, hams, and shoulders, from which fat cannot be trimmed since most is inside, consumers seemed to prefer the meat-type.

At the packing plant level, there were extra costs of processing meat-type hogs and pork as differentiated products. These extra costs were mainly for labor and included the sorting and weighing of meat-type hogs separate from the regular run of hogs, tattooing all of the meat-type hogs for later identification, grading the carcasses to maintain meat-type standards, various intraplant functions such as the separate weighing and boxing of meat-type products, and finally the keeping of records necessary to determine the value of meat-type hogs and pork. The total labor cost of these functions was about 25 cents per meat-type hog.

There were two additional costs of processing meat-type hogs and pork. The first was the cost of inaccurate live selection of meat-type hogs and pork. The second cost was the reduction of quality of the packers' normal run of hogs when the meat-type hogs were selected.

This year another test was run, in which the meat-type pork was priced 2 and 6 cents above regular pork. Result: At both price differentials (2 and 6 cents) about 45 percent of all pork sold was meat-type.

In this recent test in Terre Haute, large signs with interchangeable prices were employed to call consumers' attention to the price differences. It was important that consumers know that they were being charged a higher price for "Tend-R-Leen" pork and that they then decide which of the two types of pork to buy.

Consumer reaction to meat-type Boston butts was the most favorable percentagewise of all cuts in this study. It was the only cut in which meat-type pork actually outsold regular pork. At 2 cents higher price, 50.3 percent of all pork sold was meat-type, while at 6 cents 53.3 percent of the total was meat-type (table 1).

Table 1.--Percentage of meat-type and regular pork sold at 2 and 6 cents price differential

Cut and price differential	Percentage of total pork sold	
	Tend-R-Leen	Regular
Boston butt		
2 cents	50.3	49.7
6 cents	53.3	46.7
Pork loins		
2 cents	43.1	56.9
6 cents	41.6	58.4
Fresh picnics		
2 cents	44.6	55.4
6 cents	46.3	53.7
Semi-boneless ham		
2 cents	42.6	57.4
6 cents	44.0	56.0
Bacon		
2 cents	51.0	49.0
6 cents	50.3	49.7
All cuts		
2 cents	45.4	54.6
6 cents	45.5	54.5

Percentagewise, movement of the meat-type pork loins was the lowest of all cuts studied. This again may have been the result of an exceptionally close external trim given to the retail cuts of both the meat-type and regular products.

Consumer reaction to fresh picnics was the most variable in relation to all cuts studied. Also, newspaper promotion and special sales made it difficult to supply sufficient "Tend-R-Leen" picnics during some weeks of the test. Whenever a store ran out of any cut and consumers did not have a choice between "Tend-R-Leen" and regular pork, the data for that week were rejected.

Semiboneless half hams were tested in this study, since it was felt consumers could judge quality better when the degree of internal fat could be seen. Of the total pounds of semiboneless hams sold, 42.6 percent was "Tend-R-Leen" at the 2 cents differential, while 44.0 percent was "Tend-R-Leen" at the 6 cents differential. Bacon was the only item that carried a brand name other than the "Tend-R-Leen" label. Both types of pork were packaged in the packing company's branded bacon wrapper. The meat-type bacon carried the "Tend-R-Leen" label in addition. During the 16 weeks of the test, the sales of both types of bacon were three times as great during the latter weeks of the study compared with the first few weeks. It is interesting to note that certain of the retail cuts sold better at the 6 cents differential than the 2 cents differential (Boston butts, fresh picnics, and semiboneless hams). The reason for this is not known. It is possible that some consumers consider the price of certain items to be an indication of quality--thus, they buy the higher-priced product. An attempt was made to determine the effect of advertising and promotion on the sale of meat-type pork. The first 12 weeks were conducted with no advertising or promotion. The first time the consumer was exposed to "Tend-R-Leen" was when she saw it side-by-side in the meat counter with regular pork. Her decision to buy was based on her visual appraisal of the two products.

After this "pure" part of the study was completed (the first 12 weeks), an attempt was made to influence the consumer's decision through advertising and promotion during two weeks. Radio, television, local news stories, and paid store advertising were used to tell the "Tend-R-Leen" story. For all cuts, an average of 44.9 percent "Tend-R-Leen" was sold the first 12 weeks (without advertising and promotion) as compared to 49.4 percent the next 2 weeks (with advertising and promotion). Consumer response to the advertising varied somewhat by cuts. In the case of Boston Butts, pork loins, and bacon, a higher percentage of total sales were credited to the "Tend-R-Leen" product. However, in the case of fresh picnics and semiboneless hams, a higher percentage of total sales shifted toward the regular pork products (table 2).

Table 2.--Percentage of meat-type and regular pork sold without advertising and with advertising

Pork cut	Average first 12 weeks	Advertised 13th and 14th week
	(Percent)	(Percent)
Boston butts		
Tend-R-Leen	49.6	57.7
Regular	50.4	42.3
Pork loins		
Tend-R-Leen	41.4	52.3
Regular	58.6	47.7
Fresh picnics		
Tend-R-Leen	46.1	35.4
Regular	53.9	64.6
Semi-boneless hams		
Tend-R-Leen	44.8	38.8
Regular	55.2	61.2
Bacon		
Tend-R-Leen	48.5	55.3
Regular	51.5	44.7
All cuts		
Tend-R-Leen	44.9	49.4
Regular	55.1	50.6

THE RELATION OF THE PACKERS AND STOCKYARDS ACT TO STATE LIVESTOCK MARKETING PROGRAMS

David M. Pettus, AMS, U. S. Department of Agriculture

The amendment to the Packers and Stockyards Act by the 85th Congress extended jurisdiction to all livestock transactions in interstate commerce. This amendment placed additional duties on the Department. Before discussing the relation of the Packers and Stockyards Act to State livestock marketing programs, I would like to summarize briefly some of our activities since passage of the amendment.

During the fiscal year 1959, we posted approximately 1,000 auction markets throughout the country. Since July 1 of this year we have practically completed the posting work on an additional 600 auction markets. This work is now nearing completion in the North Atlantic area, on the West Coast and in Minnesota, Illinois, Kentucky, and West Virginia. More recently we have undertaken posting in Florida and South Carolina. Through an agreement with State officials, this program is being delayed in New York until after January 1. It is anticipated that there will be a modification of some of the New York State laws at that time, relating to the packers and stockyards area of operation. We expect to complete almost all of our posting, with the exception of New York, prior to January 1; and, in New York, before July 1, 1960.

Our registration and bonding of dealers is proceeding currently at a satisfactory rate. We believe we have about one-half of the total registered at present, and letters have been written to dealers included in the lists submitted by some of the State directors of agriculture. We hope to complete this registration during the current fiscal year, although we feel that most of the large dealers will be registered prior to January 1.

We do not believe that the new jurisdiction provided by the amendment will seriously conflict with existing State legislation. As previously noted, we have discovered a few areas where slight revisions of State statutes have been necessary so that the statutes will conform to the provisions of the Packers and Stockyards Act, thereby enabling the States to continue to assume responsibilities in regulatory activities affecting livestock. In working with the various State departments of agriculture, it has become increasingly apparent to us that there is a great need for close cooperation between Federal and State officials. All of the members of our staff have been instructed to work closely with State officials.

Several specific areas exist in which we need to develop more cooperative effort for the best interests of the livestock industry. First is the bonding of market agencies and dealers. The purpose of bonding is to provide financial protection to the farmer or producer of livestock when his livestock is sold. We always consider the bond as the last recourse of the farmer when a financial failure occurs. However, prior to insolvency, there may be misuse of shippers' funds or other financial activities, such as checks being returned for insufficient funds or delayed payments for livestock, which indicate a dangerous financial condition. It is our firm belief that the longer the operator continues in business after he has reached the point where his current liabilities exceed his current assets, the greater is the danger to the livestock producer. We have accountants experienced in auditing livestock records who, on very short notice, can quickly examine the books and records of a registrant to determine his true financial condition. Any State official who is familiar with the operations of anyone subject to the Packers and Stockyards Act should promptly advise us of any facts which indicate the possibility of a questionable financial condition or pending insolvency. This can be done by a telephone call direct to our district supervisor. Even though the statement may prove to be a rumor, a quick financial check frequently can save livestock producers thousands of dollars.

The second area where there can be mutual assistance between State officials and our employees is in the field of unfair practices in marketing of livestock. Under provisions of the Packers and Stockyards Act, we can, for the purpose of correcting practices which are injurious to farmers, issue formal complaints alleging unfair or deceptive practices in connection with the selling, handling, weighing, and so forth, of livestock. Serious cases may also involve court action, either civil or criminal. In either case it is necessary for us to develop facts which will clearly show the true nature of the practices and their effect upon livestock marketing. We obtain leads through complaints from livestock producers, observations by our own employees, and through audits of the books and records of those subject to the Packers and Stockyards Act. In addition, we frequently receive complaints from farm organizations and State officials. In your State livestock marketing activities, your employees continually come in contact with livestock operators, producers, and others who are thoroughly familiar with the practices at any given market or area. If at any time during your operations you receive information from any source, either confirmed or in the rumor stage, which indicates a violation of the Packers and Stockyards Act, it will greatly facilitate our work if you will promptly call it to the attention of our district supervisor. All information received from such sources is kept confidential and will not be disclosed without your consent.

A third area where cooperation is of mutual benefit is in connection with scale testing and weighing practices. Regulations under the Packers and Stockyards Act require that all livestock scales subject to supervision be tested semiannually to the capacity to which they are used. This testing must be done by a competent testing agency, and copies of scale test reports must be furnished to the Packers and Stockyards Branch. This places the responsibility on the scale owner to have scales tested. It does not put the Packers and Stockyards Branch in the scale testing business. In view of this fact, we are dependent to a great extent upon the individual State weights and measures agencies to provide us with information as to the accuracy of scales and weighing practices. In this field, considerable progress was made, prior to the amendment to the Act, toward coordinating Federal and State work. In 1957, the Department officially adopted, with one minor exception, the Code of Specifications and Tolerances as contained in National Bureau of Standards Handbook 44. That Code also has been adopted by the departments of weights and measures in a number of States, with the result that there is now no conflict in State and Federal requirements for livestock scales.

During the past year a joint Federal-State scale test report form has been developed. This form seems to be meeting the general approval of most State officials contacted so far. The revised report carries both the designation of the individual State agency and the U. S. Department of Agriculture. At present about 15 States have adopted the form. In those States which are not in a position to furnish more than one scale test a year, scale owners must procure the additional required test from a properly equipped private scale service company.

Our feeling is that livestock scales require regular maintenance and that scales of a public nature should be subject to a regular maintenance and testing program. Some States have successfully conducted check-weighing programs. We anticipate broadening our program in this connection, and where such programs exist in the States, we will try to coordinate with the State agency.

Another field in which cooperative arrangements between Federal and State agencies can be helpful is in carrying out provisions of statutes covering brand inspection and disease control. Normally, expenses are incurred by market operators in connection with providing facilities and services necessary to secure compliance with State and Federal statutes in this field. It is desirable to avoid unreasonable demands upon the market agencies and stockyards by working out cooperative approaches which will reduce the expense of administering such programs. One point to keep in mind is that additional expenses incurred by stockyard companies usually find their way into the tariff provisions. This,of course, results in larger marketing costs to livestock producers.

During the past few minutes, I have outlined a few areas in which closer Federal-State cooperation can be of mutual assistance. There are, of course, many others. In closing, I would like to emphasize that we firmly believe that the job of regulating an industry as important and as diversified as the livestock industry requires the coordinated efforts of both Federal and State agencies.

IMPROVING LIVESTOCK AUCTION MARKET FACILITIES

George E. Turner, AMS, U. S. Department of Agriculture

In an effort to find ways to reduce marketing costs, the Agricultural Marketing Service has made studies of many kinds of marketing facilities. It has also made studies of the work methods and equipment used in these facilities. In each case recommendations have been made for increasing efficiency. One field of study has covered livestock auction markets.

At the outset of our research work on livestock auctions we found several major defects in the design and arrangment of present facilities which affected the efficiency of market operations. Some of the more important defects are:

1. Improperly designed truck docks.--Many truck docks are too high or too low, and as a result livestock are often handled roughly in unloading and loading. Truck dock chutes are mostly the ramp type over which livestock move with undue hesitation. The pens to many chutes are inadequate in size for holding livestock temporarily at the dock. In some instances, there is a complete lack of chute pens.

2. Excessive fences and gates.--Fences and gates on many auctions are too high, have too many rails, and as a result construction cost is excessive.

3. Improperly located scales.--The location of scales on many auction markets necessitates the use of extra workers and prevents buyers and sellers from seeing weight determinations and recordings being made.

4. Improperly arranged yard facilities.--The yard facilities on many markets are improperly arranged for a direct flow of livestock through the market, and cause: (a) long drives of livestock between work stations, (b) cross flows, (c) mixups of livestock, and (d) back drives and out-of-line drives of animals.

5. Poorly designed sales barns.--In many barns the seating arrangment is inferior and seats are uncomfortable, prospective buyers cannot obtain a clear view of the animals in the ring, and the auctioneer is unable to see prospective buyers. Sales rings are frequently improperly designed for driving cattle into and out of the ring quickly.

6. Small market sites.--Many markets have sites of inadequate size and as a result traffic is congested, delays occur in unloading and loading, and insufficient parking space is available.

In the early stages of our research work to develop improved facilities and work methods, we found that the kind and type of livestock auction market facilities needed for performing market operations efficiently were dependent on the market practices employed. The practices are numerous and they vary widely throughout the country. In many instances there is a high degree of similarity in the practices used. For illustration, the practice of weighing livestock just before they are sold is similar to the practice of weighing livestock after they are sold. However, where the livestock are weighed in the market has considerable influence on the kind and type of facilities needed and the arrangement of the facilities in the layout of a market. A market that practices weighing livestock as they arrive on the market usually has a scale and scale platform near the receiving dock.

Research in the Southeast, the Appalachian area, and Texas shows that weighing, grading, and sorting different species of livestock are considered to be key practices because they influence the layout, design, and operations of auctions. On the basis of key practices, markets are divided into four general types: (1) Markets that weigh livestock after their sale, (2) markets that sort and weigh hogs on arrival and weigh cattle before their sale, (3) markets that weigh livestock before their sale, and (4) markets that sort livestock into grades and market classes and weigh on arrival. These four types of markets do not include all the variations and combinations of market practices found in the regions where studies were made, but they do represent the major types. Furthermore, some of these types of markets, particularly the type that weighs livestock after their sale and the type that weighs livestock before their sale, are common in areas other than where research studies were conducted.

Detailed information on the kind and type of facilities needed, and a suggested market layout showing the arrangement of the facilities for handling livestock efficiently for each of these four types of markets, have been made available in publications released by the Department and the Texas Agricultural Experiment Station.

On the basis of our research work, we have developed some major principles that we believe might be used as a guide for developing improved work methods and market layouts. These principles, by major components of the market, are as follows:

Yard Facilities

1. The size of yard facilities should be adequate to handle the typical volume of business with a high degree of efficiency and to render reasonable services on peak volume days.

2. Facilities should be arranged to provide for a direct flow of livestock into, through, and out of the yards, with short drives between work stations.

3. Ready access should be provided to and through the yards for people, vehicles, and livestock, with minimum delay.

4. Facilities should be arranged so that appropriate drive alleys connect with the auction barn to insure a one-way flow of livestock into and out of the sales ring with short drives.

5. The facilities should permit the combining of small lots of livestock whenever practical for movement between work stations and for yarding.

6. Facilities should be arranged so they can be expanded for a larger volume of business and maintain the same direct flow of livestock into, through, and out of the yards.

7. Overall planning of yard facilities and operations must take into consideration the relation of each part of the yards to all other parts and to the sales barn.

Sales Barn

The sales barn should be designed to provide:

1. Accommodations for an audience of fluctuating size.

2. A seating arrangement which permits buyers, sellers, and spectators to have an obstructed view of the sales ring and auctioneers' box.

3. A sales ring that permits a free flow of both single animals and groups of animals into, through, and out of it with a minimum of delay and labor.

4. Market offices arranged for easy accessibility to buyers and sellers, and to facilitate the exchange of records with the auctioneers' box.

5. A lunch room, telephone booths, and toilet facilities.

6. Minimum construction and maintenance costs.

Market Site

The market site should:

1. Be of adequate size to provide for principal driveways and wide aprons for ready access to the market, parking area for market patrons, and possible market expansion.

2. Be easily accessible by public highways (rail connections may also be desirable in some instances).

3. Lend itself to low-cost drainage for economical market operations.

Potential benefits from properly designed and arranged livestock auction market facilities are:

1. Fewer workers should be required to perform market operations.

2. Losses from shrinkage, bruises, injuries, and deaths should be minimized.

3. The amount of time sellers' trucks spend waiting to unload should be reduced.

4. The rate at which buyers' trucks can be loaded should be increased--an important consideration with most buyers and an inducement for them to deal with the market.

5. An uninterrupted flow of livestock into the sales ring should be assured.

6. The assignment of more separate pens for individual consignors should be possible with a more efficient utilization of pen space--a service that is often requested but difficult to give on some existing markets.

7. The recruiting of labor should be less difficult and closer supervision could be given to employees.

8. Sanitary conditions should result, which should minimize the spread of livestock diseases.

9. More comfortable and modern conveniences should be available for market patrons.

All of these items should assist markets in maintaining present volumes of business and enable them to obtain new business.

PROGRESS BEING MADE IN IMPROVING AUCTION MARKET FACILITIES IN KENTUCKY

R. D. Hager, Kentucky Department of Agriculture

Improving auction market facilities takes in the physical facilities and also improving intangible facilities like buying, selling, loading out, and shipping time schedules.

I will talk mostly about what we have done in improving physical facilities in auction markets in our State.

Kentucky has issued 83 stockyard licenses for 1959, including licenses for weekly auctions, packers buying direct, and receiving stations. Weekly auctions and their facilities are more of a concern to the Kentucky Department of Agriculture than the other firms with stockyard licenses, because of the volume of livestock moved through this method.

Livestock auctions started in Kentucky in 1923; today, we have 67 auctions selling on a weekly basis. Many of these yards were built without too much planning and to change many existing features would necessitate rebuilding yards. Kentucky stockyards vary in size both in pen space and number of head sold. We have yards that move 10,000 head of stock in one sale day to yards that move as little as 200 head in one sale day. We have discussed facilities and their improvements with nearly all yards in Kentucky. Some are cooperative, and some think we are meddling.

The great majority of yards in Kentucky have one scale, one sale ring, and one set of loading chutes or one dock for both receiving and loading out. Our main thought on improving facilities lies with the one-scale, one-chute, and one-dock yards. Our suggestions cannot be followed at some yards because they are in such disrepair it would mean new facilities would have to be built.

The system of selling in a yard means different facilities will serve different purposes. Our yards sell on a weigh-in basis. This means our scales do not have to be located next to the sale ring but should be convenient to the unloading dock.

Basically, we have only these things to consider in planning facilities at an auction: Unloading, weighing, penning, holding, selling, and loading. This flow must be simple and mostly in one direction.

We have worked with most of the new yards that are constructed in the State. I will talk about two specific yards, one in east Kentucky and one in west Kentucky, and these will serve as a picture of what we are doing and trying to do in improving our auction facilities.

A new yard has been constructed at Barbourville, Ky., recently. I met with the construction committee with five different layouts or blueprints that I had selected as showing good facilities. A plan was selected that would permit expansion of the yard in the future without alterations to the present building.

We then requested certain private business firms to give us estimates of material and labor costs for construction, operating costs and commissions. These estimates indicated that the yard should be a financial success and it was constructed and put into operation.

In Paducah, Ky., an auction market was displaced with a road. I again furnished prints for a yard. These prints were followed as a guide. The scales were located next to the sale ring because this gives the farmer a choice of selling on a weigh-in or weigh-out basis. All gates reach across the alleys and open in one direction to facilitate driving livestock.

We have used recommendations of the U. S. Department of Agriculture on height of pens for different classes of stock, number of square feet per animal, depth of scale pits, and recommendations for loading out and unloading.

We are now working with a yard to improve penning facilities. This yard has a catch pen for cattle next to the scales. When the catch pen is full they move the stock to a pen for holding. To me, this needs improvement to fully fill buying facilities. Cattle are not sold by class, but as they are unloaded. A stocker buyer must stay the whole sale and so must a cow buyer and slaughter stock buyers. I hope we make some improvement here in the future.

These are some of the things we have done to improve auction market facilities in Kentucky.

ADJUSTING MARKET NEWS TO CHANGING PATTERNS OF MARKETING LIVESTOCK AND MEAT

David M. Pettus, AMS, U. S. Department of Agriculture

The Department of Agriculture has been reporting livestock transactions through its Livestock Market News Service for more than 40 years. The service began in 1916, at the request of national livestock organizations, and over the years its purpose has been to supply livestock producers and others in the livestock and meat industry with accurate and timely price and volume information on livestock, meats, and wool.

Initially, emphasis was directed toward reporting the wholesale meat trade at several of the major meat centers, since information on price, volume, and kinds of meat being traded was not available to livestock producers. The Department later turned its attention to reporting transactions at several major terminal markets. One of the very first steps taken in establishing the service was to initiate a reporting system which used uniform terminology in describing transactions.

Increases in the use of auction markets during the 1930's and in direct sales at feedlots and country points in the years immediately after World War II brought about the need for expanded market news reporting and some changes in the reporting system. Throughout this period, some terminals decreased in importance, while a number continued to grow. However, the larger share of growth in livestock marketings over the past several years has been in direct sales of livestock from the farm or feedlot and the rapid expansion in selling through auction markets. According to 1955 data, country sales of livestock accounted for about 38 percent of the total marketings by farmers, with sales at terminal markets a close second with 34 percent, and sales at auctions third with 26 percent.

This diversification in marketing livestock has presented a number of reporting problems. Procedures used in collecting information differ a great deal between direct, range, and terminal sales. Reporting direct and auction sales requires more travel, telephoning, and time, when compared with covering sales at terminal markets. While techniques used in collecting information differ at each market, there are basic tenets adhered to by all reporters. Accuracy, timeliness, and complete information are primary requisites for all reports.

One of the first adjustments made in the market news service to more adequately meet needs of the industry was the reporting of direct sales of hogs in interior Iowa and southern Minnesota during the early 1930's. A similar service was later provided to cover direct hog sales in the Georgia-Florida-Alabama area.

Initially, reporting of range sales of cattle in the West was handled by reporters already located at terminal markets. The need for this service has grown in many areas and has required more attention than the terminal market reporter was able to give and still perform his responsibilities at the terminal market. As additional funds were provided, offices were opened at Visalia, Calif., Phoenix, Ariz., and Clovis, N. Mex., to provide information on direct sales. In addition, a 2-year market reporting research project was carried on in the Colorado feedlot and range areas from July 1957 through June 1959. This work has been established on a continuing basis as part of the market reporting services of the Denver office. However, other market areas still remain which could be covered more intensively.

In recent years, there has been increased emphasis on reporting sales of wool in western and southwestern producing areas. These reports supplement those provided since 1924 by the Boston office.

Auction markets have become increasingly important as livestock markets in recent years, and this has stimulated requests for greater coverage of such sales. Auction market reporting is complicated because of the relatively small volume of livestock handled at most auctions and because they usually operate only one day per week. These problems have been met in some areas by combined Federal and State efforts whereby each of a number of qualified State reporters covers four or five auctions per week under the technical supervision of a Federal reporter. Cooperative efforts of this kind between Federal and State governments have made it possible to expand market news activities into new areas and still maintain the same high standards used by the Federal service.

In wholesale meat trade reporting, efforts in the past were directed primarily toward covering the distributive or less-than-carlot trade. In recent years producers and feeders have made greater use of these reports to relate wholesale beef prices to prices received for their cattle. In order to provide more useful information, emphasis has been directed to reporting more sales on a carlot basis. Two new carlot reports were initiated during 1958 at Denver and Omaha. Plans are under way to effect additional coverage of carlot trading in meats.

Many of the improvements and changes in the service have been the direct result of recommendations and suggestions from livestock industry groups. The united efforts of Federal and State departments of agriculture have made it possible to accomplish many of these improvements.

The constant shifts in livestock numbers, marketing methods, slaughtering centers, and so forth call for future flexibility in the market news service. Continued cooperation and close working relationships between Federal and State reporters, and with the industry, should make future growth in market news services beneficial to all.

THE NEED FOR NEW AND BETTER LIVESTOCK MARKETING INFORMATION

Gene Futrell, Iowa State College

Before talking specifically about new needs in livestock marketing information, I would like to stress the importance of marketing in the livestock business and the importance of information in successful marketing. Marketing is a vital phase of livestock farming, perhaps even more so now than it has ever been. And information is the basis of a good marketing job.

The marketing job has taken on greater significance as agriculture has grown larger, more complex, and more businesslike. The total output of the agricultural industry has increased, and the output of most individual farm units has increased as farms have grown larger. Technological advances in livestock and crop production have enabled us to produce more bushels or tons per acre, and more meat, poultry, and dairy products per pound of feed. Not only has volume per farm increased, but marketing channels have changed. And improvements in transportation have widened the range of market alternatives accessible to most producers.

Underlying these changes in agricultural production and marketing has been a declining price level for many farm products and a steady increase in the cost of many of the resources used in the production of agricultural commodities. This pressure on farm incomes has made the marketing decision an even more decisive factor in the farm business. A poor marketing job can quickly erase the advantages gained from efficient feeding and management.

It is also important to remember that marketing information is needed not only by farmers, but by buyers and processors of farm products if the job of marketing and distribution of farm products is to be done with maximum efficiency. Thus one of the conditions necessary for an efficiently functioning market is that all sellers and buyers within the market have complete information regarding market conditions.

I would like to divide my remarks on specific needs in the area of livestock market information into three areas: (1) The need for new and improved livestock estimates and data, (2) the need for new and improved current market information, and (3) the need for improved dissemination of livestock market information.

Agricultural Estimates and Data

In the area of agricultural estimates and data, timely, complete, and accurate estimates and data are needed so farmers can make the best possible production and marketing decisions. Sam Gilbert, agricultural statistician in Iowa, has told me that requests for new data are generally of two types. First, there are requests for more frequent data, and second, for more localized data on livestock production, numbers, and marketings. Mr. Gilbert was also a member of a committee appointed by the American Farm Economics Association in 1954 to survey the requirements for data by users and to suggest areas of development and improvement. Their survey indicated much the same general picture. It revealed demands for (1) more local and small area data, (2) more frequent data on livestock, (3) more price information by grade and class of livestock in some areas, and (4) greater accuracy in estimates in data, along with more rapid release of the information.

In discussing specific needs and improvements in livestock estimates and data, let's look at each class of livestock separately. But first, one general statement of need regarding all kinds of livestock. One of the first livestock data needs is for annual census data on livestock numbers and marketings on a county and district basis within States. Such information is already available in many States, and should become a part of the data program in the remaining States.

Hogs.--The semiannual pig crop report giving information on the number of pigs saved, sow farrowings, breeding intentions, and numbers of hogs on farms, combined with the quarterly reports for 10 major States on sow farrowings and breeding intentions, gives us a pretty good picture of the national situation on hogs. It seems to me that the major improvement in this area would be to expand such information to a county and district basis in major producing States. Such information would give a much clearer picture of the local and area supply situation. It would aid farmers in planning the time and place of marketing livestock and, at the same time, would aid processors in planning their own buying operations.

A second major improvement would be to make the pig crop reports on a quarterly basis, as a result of the change in the annual farrowing pattern. The past couple of years have demonstrated this need. To forecast effectively probable supplies and prices several months in advance now requires the use of quarterly data.

Quarterly or monthly reports on marketing intentions on a statewide basis have been tried in some States, but I believe have now been discontinued. Although I do not know the history of success or failure of such reports, it would seem that such information should be of considerable value to producers, buyers, and processors--providing that reliable information can be obtained.

Another area in which new information is needed as far as hog marketing is concerned is in regard to shipments of feeder pigs between States. The feeder pig business in many States has increased to the point that farrowing information does not give an accurate picture of the marketing potential in a given area. For example, last year in Wisconsin, more that 600,000 head of feeder pigs were shipped out of the State. These pigs moved primarily into Iowa, Minnesota, Illinois, Indiana, and Ohio. Over 500,000 feeder pigs were shipped into Indiana during 1958. This increase in the interstate movement of feeder pigs has a considerable effect on the supply of hogs marketed from various States. Farrowing and pig crop data do not give a true picture of the market supply available in either the States shipping feeder pigs or the States receiving feeder pigs in large quantities. Information on feeder pig movement should be relatively easy to obtain through health inspection records in many States, and should be made available at least on a quarterly basis. This is analogous to information now available on feeder cattle inshipments.

Cattle.--Present quarterly estimates of the number of cattle on feed in major feeding States provides a good deal of information on potential cattle marketings, but there are gaps in both the kinds of information available and the time of availability. Recently, monthly reports of cattle on feed have been inaugurated in California and Arizona. An expansion of such monthly reports to include some of the other major feeding States, especially Iowa, Illinois, and Nebraska, would be desirable. The concentration of cattle feeding among fewer and larger operators in such States as California and Arizona probably makes collection and assembly of monthly data a much easier process than would be true for the other States suggested.

A gap in the chain of information available on cattle is estimates of the supply of native-grown feeder cattle in many feeding States to supplement information now available on inshipments into the Corn Belt States and on movement through terminal markets. Native feeder supplies are becoming more important in the Corn Belt as well as many Southern and Eastern States. Also needed is further information on the movement of range cattle through auction markets in parts of the West. The fairly recent establishment in Denver of a cooperative program between the U. S. Department of Agricultaure and several of the Western States to gather information on range conditions and livestock movement has done a great deal to improve the information we have on feeder cattle and lambs. But further information, especially on the volume of sales in these areas, is needed.

An expansion of marketing intention estimates, which are included in the quarterly cattle-on-feed reports, to include estimates of the sales of slaughter cows and non-grain fed cattle would be very desirable.

Sheep and lambs.--For sheep and lambs, major needs for improvements in available information include more frequent and more specific information on the number of lambs on feed for market. The relatively short feeding period for most lambs makes present reports of limited value. Present reports are also weak because they are in relative terms for the most part, such as "somewhat more" lambs on feed than a year ago, or "slightly more" on feed in the Corn Belt. Information on the number of lambs on feed for market should be available from major feeding States at least on a quarterly basis and preferably on a monthly basis. Also, if possible, estimates of supplies of native feeder lambs would be a valuable addition, as Corn Belt farm flocks become more numerous and larger.

I recognize that additions to the livestock estimating and data programs might not be possible under existing appropriations and facilities. Furthermore, it is recognized that we can only get the livestock data that people want us to have. We must also be careful not to overwork our respondents or to have too much duplication of effort in collecting information.

Needs and Improvements in Current Market Information

Many of the needs for improvements in current market information are a result of changes in livestock marketing. Among these are the trend toward more direct selling of livestock, both to packing plants and through auction markets. Along with that has been a decline in terminal market selling and the further decentralization of the meatpacking industry. New developments in methods of selling (carcass grade and yield) and shifts in production areas have also created changes and needs for improvements in market information. As is true in the area of livestock estimates and data, one of the needs in current market information is for more local information. As a result of the changes in marketing and production, there is a definite need for more supply and price information on direct marketings at packing plants and through auction markets.

The rapid increase in direct sales of fed cattle to West Coast packers from California, Colorado, and Arizona feedlots has created a definite need for more price reporting on these sales. There is a need for supply and price information on direct and auction sales of slaughter cows, veal calves, feeder cattle, feeder lambs, and certain kinds of breeding stock. Large numbers of these kinds of livestock are sold through these channels; however, the only marketing information available for the most part is on terminal market sales. For a number of years the Federal-State Market News Office in Des Moines has reported daily on direct sales of hogs, sheep, and lambs at interior packing plants. In this particular area a similar report on direct sales of fed cattle, slaughter cows, and veal calves is a definite need. Other areas have similar needs. The Federal Market News Service has also operated a direct reporting service in the Thomasville, Ga., area covering sales of hogs and cattle in parts of Georgia, Alabama, and Florida. An experimental report covering direct sales of hogs in northern Indiana was conducted from Muncie during 1956, I believe, but has since been discontinued.

Although reporting of direct sales involves problems not encountered in covering sales at terminal markets, an expansion of this type of reporting is essential if we are to provide a complete and factual picture of livestock price and supply conditions at markets throughout the country.

Other needs in the area of current livestock marketing information include more reporting of prices by grade, greater uniformity in the use of grade terminology, and reporting of prices by grade within reasonable ranges.

Another area of information which should be of value is something additional on a short-term supplies, to supplement present daily estimates. For example, weekly and monthly estimates of marketings of various kinds of livestock could be of considerable value in making preliminary marketing plans, and from the standpoint of meat processors, in planning their buying and the use of labor and facilities. Such information, in effect, might be a refinement and interpretation of normal seasonal marketing patterns to give some indication and reminder of the probable level of marketings during the weeks ahead.

Advance information on holidays, Jewish holidays, livestock shows and exhibitions, and seasonal factors that normally affect livestock markets would be of considerable value to producers.

Improvements in Dissemination and Use of Market Information

An important need and one which State departments of agriculture and State agricultural universities could provide to large extent is for greater interpretation and analysis of markets and market information. Why a market performed as it did and the short-term outlook for probable market performance in the next few days would be of great value to livestock producers. Information of this type could be prepared by a livestock marketing or market news specialist at either the State agricultural university or State department of agriculture and released to radio stations, television stations, and newspapers throughout the State or area.

Where the State agricultural college or university has its own radio transmitting facilities, such information could be given immediate dissemination. For example, in Iowa (and I realize that we are more fortunate in this respect than many States) the State agricultural university radio station has a receiving area that includes the entire State as well as parts of most of the adjacent States. In situations of this type, dissemination of market interpretation and analysis could be very effective and valuable.

In the whole area of market news and market information dissemination, many improvements could be made. These include both the timeliness of dissemination, the completeness and accuracy of the information released, and improvements in the presentation of the material. To be of maximum value, or in fact to be of practically any value at all, market information must be made available to sellers and buyers of livestock at a time when marketing decisions are being made. This means that the traditional early-morning and noon radio reports are not adequate. From my own experience in market news work in Iowa as well as from information obtained from surveys conducted in other States, I am convinced that livestock producers and buyers will listen to market information by radio during the trading hours if it is available.

A considerable amount of money and resources are devoted by the Federal Government and by many State governments to the collection of market information. In many instances considerably more attention should be given to the effectiveness of the dissemination of this material. For some agricultural commodities the market situation does not change rapidly. However, livestock supply and demand conditions, and, as a result prices, change very frequently, often many times within the day. As a result, timely information on marketing conditions is of utmost importance. Other requirements of effective market news dissemination are that the information be accurate, complete, concise and understandable.

I have tried to talk about things that would be desirable if conditions permit. In the areas of agricultural estimates and data, it seems to me that State departments of agriculture, through matching fund programs with the Federal Government, have the major responsibility for improvement. This responsibility also extends to the collection of needed current market information. I feel that the major responsibility of the Extension Service in this area is to provide timely, accurate, and complete dissemination, interpretation, and analysis of current marketing information, as well as background and outlook information. One way to help achieve this would be through wider availability of the USDA's Leased Wire Service to individual States. At present, only a few have been able to obtain this service, which furnishes a timely, reliable, and complete source of current market information.

Since the marketing of agricultural products has taken such a vital place in the agricultural business and since information on market conditions is essential to a successful marketing job and an efficient marketing and distribution system, it is essential that we attempt to provide as much of the information as is necessary and as is practical to provide. Dr. Ensminger of Washington State College has called farmers "businessmen in overalls," as a result of the drastic changes that have taken place in our agricultural business. Certainly this description fits most of our livestock producers.

CONCLUSIONS AND RECOMMENDATIONS

of Livestock Work Group

Efforts to develop objective methods of measuring quality factors and palatability characteristics in beef have not been too successful. Measurements made by physical devices of various kinds and chemical tests have been found to be correlated with specific quality factors but generally the correlations have been low. In general, the various objective methods so far developed are inferior to the subjective techniques presently used in beef grading. The taste panel is still the best method for measuring palatability factors. The discussion brought out that U. S. Department of Agriculture beef grades provide some indication of beef quality, but that the relationship between grade and quality is not very exact. There is, however, no better method at present for classifying beef.

Consumer preference studies conducted by the Missouri Agricultural Experiment Station and others confirm that consumers want beef which is uniformly tender, tasty, and lean. Recent experience shows that this is not an impossible goal. Large quantities of this kind of beef are being produced, and indications are that research people in breeding, feeding, and processing will develop a means of expanding the proportion of this kind of beef.

The studies at the Missouri station show that U. S. Prime and Choice beef loins, for example, were quite acceptable to the consumers tested. There are some who feel, however, that these grades are "oversafe" in that they exclude much beef that is just as acceptable to consumers. In the tests by Missouri about 2/3 of the loins grading Good in accordance with Federal standards were just as acceptable as those grading Choice; also 1/3 of Standard loins had the eating quality of the Choice loins. The group reached no conclusions as to how to identify and sort out those carcasses in the Good and Standard grades with eating qualities on a par with the two higher grades.

Work by Purdue in cooperation with marketing firms has demonstrated that "meat-type" pork can be differentiated from regular pork and merchandised on its merits. In one test when the two types of pork were sold at the same price the meat-type outsold the regular by about 6 percent. Results varied by individual cuts, with increases of as much as 13 percent for hams. Surprisingly, meat-type pork loins sold no better than regular loins. This may have been due to trimming performed on the regular loins. Results of another test show that consumers will pay premium prices for retail cuts from meat-type hogs. At retail price premiums of 2 and 6 cents per pound, about 45 percent of all pork sold in test stores was meat-type. Meat-type Boston butts actually outsold regular at these premiums. The fact that as much meat-type pork was sold at the 6-cent premium as at the 2-cent per pound premium is interesting. For some cuts, Boston butts for example, more of the meat-type pork was sold at the 6-cent than at the 2-cent premium. Apparently some consumers associate price with quality. Some extra costs were involved in segregating and maintaining separate identification of meat-type pork at the packer level. Labor costs of performing these extra services amounted to about 25 cents per hog.

Amendment of the Packers and Stockyards Act by the 85th Congress extending jurisdiction to all livestock transactions in interstate commerce has increased greatly the responsibility of the Agricultural Marketing Service in this area. Cooperation of State departments of agriculture is needed in meeting these responsibilities. This is being worked out in such activities as bonding and scale checking. The States can help in the administration of the program by providing information on situations involving potential financial losses to producers and in ferreting out improper practices. There is an informational job to be done in pointing out to producers that the posting of a yard does not necessarily protect them from loss. In some situations, the informational agencies of Agricultural Marketing Service and the States have issued joint announcements regarding Packers and Stockyards Act requirements and activities.

Most livestock auction firms have facility and operating problems of some sort. State marketing specialists have an opportunity to help these firms and should assume responsibility for doing so. The concept of service to these firms should be broadened to encompass assistance on problems of improving selling methods and business management. One of the problems in Kentucky is to speed up selling. At one market recently, 1,100 head of cattle were sold in 800 lots. Farmers insist on selling individual animals although they may deliver a number of animals all of about equal weight and grade. Experience in Kentucky demonstrates that livestock auction facility improvement is a long-range program. It takes time to gain the confidence of operators.

At the final session, this work group considered the problems of providing adequate reporting of livestock transactions resulting from the diversification in methods of marketing livestock and the basic marketing data needs of livestock producers and marketing agencies growing out of the changed and more complex production and marketing patterns.

The discussion brought out the fact that auction market reporting is complicated by reason of the small volume and intermittent operation of these yards; also, the lack of any system of selling on the basis of grade standards. How problems of this nature have been met by combined Federal and State efforts was explained to the group. Although there was a general agreement concerning the need for expanded market news coverage of auction market transactions, no conclusions were reached as to means for financing this expansion.

It was reported to the group that producers and feeders are making greater use of information on wholesale meat prices, particularly in price bargaining with packer buyers on direct sales. The group discussed the need for greater emphasis on reporting meat sales on a carlot basis as distinguished from sales in the distributive or less-than-carlot trade which have been the principal transactions reported by the AMS Market News Service. There was little, if any, interest evidenced by any of the State representatives in initiating such a service or cooperating with AMS to expand coverage of carlot sales of meat.

In discussing the broader aspects of livestock marketing data needs, the group was told that, at the State level, demand appears to be greatest for more frequent and more localized information on production, numbers, and marketings. More price information by grade and class, greater accuracy of estimates, and more rapid release of the information also are among the improvements producers and marketing agencies would like to see. It was reported to the group that one general need for all classes of livestock is for an annual census of livestock numbers and marketings on a county and district basis within States. Some States now provide this service.

Some of the other gaps in livestock production and marketing information which need to be filled are:

1. Shipments of feeder pigs between States.
2. Data on the supply of native-grown feeder cattle to supplement inshipment data.
3. More information on the movement of range cattle through auction markets in parts of the West.
4. Expansion of marketing intentions estimates to include estimates of sales of slaughter cows and non-grain-fed cattle.
5. More frequent and specific data on the number of lambs on feed.
6. More supply and price information on direct marketing to packing plants and through auctions, made available on a local area basis.

Discussion of these data needs led into the area of improvement in dissemination and use. It was concluded that present programs have many shortcomings and that State departments of agriculture have a major responsibility for improvement.

POULTRY AND EGGS

Work Group Sessions

REPORT ON TRADEMARK PROGRAMS

William P. Charron
Maine Department of Agriculture

I would like to give a little of the background which led to the promotion of a Maine State trademark. During the depression of the early 1930's, the leaders of our potato industry developed a program which called for an industry tax and the use of a trademark to identify their products. After many conferences and public hearings, the Maine Department of Agriculture finally developed the State of Maine Blue, White, and Red trademark, which is now widely known in food circles.

In order to protect the use of this trademark, any packer or shipper must apply and secure a license before the emblem can be used on his product. When the license is issued, he signs an application in which he agrees to live up to the rules and regulations prescribed for its use by the Commissioner of Agriculture.

These regulations vary in minor details between products, but they basically require that the trademark be used with either Grade A or No. 1, or better grades. Inspection also is required in all cases.

If a State will make a real effort to control the quality of the product packed under the trademark and build up a reputation over a period of years, it should have no difficulty in convincing all of the leading chains and other food distrbutors to feature its trademark products.

Poultry

There are six major poultry processing plants in Maine which have Federal-State inspection for wholesomeness, and five of those have Federal-State grading for quality. Four of the plants are identifying their U. S. Grade A birds with a State of Maine Blue, White, and Red wing tag or wing button. The others are studying a similar plan.

We have found that chicken barbecues have a marked effect in increasing the consumption of chicken, and one of our marketing specialists has talked to groups throughout the State and has aided them in planning and conducting chicken barbecues.

Radio and TV have been used to demonstrate poultry cutting, outdoor barbecuing, oven barbecuing, and broiling; and emphasis has been placed on the fact that birds identified with the Maine Blue, White, and Red label are Federal-State inspected for wholesomeness, and Federal-State graded for quality. Viewers are urged to select birds bearing the Maine wing tag or wing button.

A booklet,"Maine's Own Chicken Barbecue," has been compiled by our marketing specialists and offered to interested persons. The demand has been strong and two additional printings have been necessary.

Two of our marketing specialists attend barbecues conducted by processors at stores throughout the State, and talk to customers about the quality of Maine chicken while directing the actual barbecuing. The success of these "Store Chicken Barbecues" has resulted in an increase of chicken barbecues of this type this year. Requests from several distributors for construction details of chicken barbecue pits and racks, as developed by our marketing specialists, have shown the interest of retail store operators in barbecues of this type. "Maine Barbecue," the widescreen theatrical short subject which the department produced and released to New York and Boston audiences a year ago, is still being shown to large audiences. This film has been shown 7,613 times in 1,113 theaters to audiences totaling 1,608,000 people as of July 1, 1959. It has also had 102 free showings on television to an estimated 4,500,000 viewers. This film was designed to stimulate chicken barbecues in metropolitan areas where Maine has an important share of the broiler market.

In answer to a question concerning the increase in barbecued chicken sales of this season over last year's sales, one large processor, who conducts this type of barbecue as a promotion feature, replied: "We have served 7,000 barbecued chickens at store barbecues this summer and we expect to serve at least 2,000 more before the season is ended, which represents about twice the amount of chicken we served in the same locations last season. We really know that this is one positive way to increase our chicken sales and improve our relations with our customers."

We cooperate with the Maine Poultry Improvement Association in sponsoring the Maine Broiler Fesitval, where our marketing specialists conduct poultry cutting and cooking demonstrations and emphasize the quality of State of Maine Grade A chicken. We compile a weekly Maine Poultry Market Information Report. This report covers such information as weekly inventory, production, destination of production, farm situation, and farm price. This information is assembled and passed back to cooperating processors on the same day. We also supply our processors with out-of-State poultry market information which is acquired direct from the Boston office of the U. S. Department of Agriculture Poultry and Dairy Market News Office.

Eggs

While we actually are an export State as far as eggs are concerned, we conduct market service work with producers, receivers, wholesalers, retailers, and restaurant and hotel operators, to keep them up to date in the latest developments in candling, handling, packaging, and marketing of eggs. We conduct egg grading and candling schools for the table egg industry annually. Restaurant and hotel operators, and consumers are informed of the best seasons of the year to purchase different egg sizes. In addition, we furnish a "table tent" featuring the suggestion "TWO eggs for breakfast" that is very popular. We work closely with home economics teachers,home demonstration agents, and radio and TV food editors, furnishing film strips illustrating egg quality, and egg cookbooks. We find that egg candling and grading demonstrations at the retail store level are very helpful in promoting the sale of Blue, White, and Red Maine trademark eggs. Egg recipes are offered to customers. Large posters in color featuring egg dishes are placed at advantageous spots in the stores. From the results of these promotions, it is evident that a proper knowledge by the consumer of what she is buying, and of different ways to use eggs in the daily food menu, instills increased confidence in her egg purchases and stimulates sales of quality eggs.

January Egg Month and March Egg Month are featured by these store promotions, newspaper releases, radio and TV demonstrations, and special releases to radio and TV food editors, home economics teachers, and trade publications. At present we are completing a month-long promotion named, "EGGtober," and the above services were used to the best advantage. We take advantage of the promotional material offered by the Poultry and Egg National Board. A popular item with our restaurant and hotel trade is a colorful menu clip-on featuring one-half plump, tender, juicy, young broiler-fryer.

As a result of a demand stimulated by retailers, we have an increased number of requests from egg producers and packers to be licensed under the Maine Blue, White, and Red trademark program.

PROMOTION OF POULTRY AND EGGS UTILIZING STATE TRADEMARK

Alois C. Schlott, New Jersey Department of Agriculture

I am pleased to have the opportunity to describe to this particular group New Jersey's progress in its long-range poultry products marketing program under its trademark--the New Jersey State Seal of Quality.

This program, now entering its third year of operation, has for its objective the maintenance of New Jersey's traditional premium markets. It is also vitally concerned with the expansion of new outlets. This will be achieved through the creation of consumer preference for New Jersey's quality-identified products, through advertising and merchandising our State's $110 million annual poultry crop. Accepting that there is no substitute for high quality in any product to be marketed successfully, New Jersey's poultry industry is employing the use of sound merchandising on a broad basis.

Consumers in our marketing area are becoming aware of the freshness and quality inherent in poultry products identified with the New Jersey State Seal of Quality. These consumers are continually urged to "look for this seal on the carton" as their assurance of the attributes just mentioned. And they are responding!

All agricultural marketing programs must begin at the source of the raw product. New Jersey has three types of producers:

1. A few large, integrated operations with capacities ranging from 100,000 to 150,000 birds. These organizations market their entire output direct.

2. The largest group, numerically, comprises those producers with capacities ranging from 5,000 - 10,000 birds. These farm operators have, for the most part, three marketing outlets: (a) One of 52 independent licensed distributors who pack eggs under the State Seal of Quality; i. e., under State supervision; (b) one of four marketing cooperatives; these organizations candle, grade, pack and market the product for their members; (c) one of the bargaining cooperatives, which do not physically handle the product, but act as agents between the independent packer, most of whom are licensed distributors, and the producer.

3. Producer-retailers, who generally have from 1,500 to 3,000 birds, are located in or near large consuming areas and serve a premium market.

This, briefly, is the makeup of our poultry industry in New Jersey. Our number one problem was to tailor-make a program that would benefit all and, at the same time, not unduly disturb existing relationships; not interrupt the orderly flow of product through the then current marketing channels.

To reduce marketing costs, a major aim is to reduce the number of stops between the producer and the ultimate consumer. One stop is required, of course. The licensed distributor and cooperative marketing organization perform essential functions; that is, the processing of the loose, ungraded pack in the consumer carton, and the marketing of the finished product. The producer-retailer has the ideal setup almost. He still needs an identified product that can take advantage of the advertising and promotion programs. A standard carton to accomplish this purpose is on the drawing board. With this completed, all producers will be in a position to avail themselves of the program.

The Poultry Products Promotion Council, responsible for the formulation of the overall program, includes in its staff three fieldmen and one merchandiser.

At the inception of the program, quality control work at the farm level was given top priority and was diligently conducted for over a year and a half. This work is being continued, but is now confined primarily to those producers who are still in need of this assistance.

Resurveys of many of these farms showed that marked improvement of egg handling and quality conservation practices at the farm level has permitted a gradual shift and greater emphasis toward merchandising in our fieldmen's activities. Indeed, so important is this aspect of marketing considered that the employment of a full-time merchandiser was considered necessary.

The program was been evolved to embrace specific users; that is the retail store, dairies with home delivery routes, and restaurant, hotel, institutional, and in-plant feeding operations. Point-of-purchase material has been developed for these outlets. Window streamers, shelf-talkers, hanging cards, and decals are appropriate for the retail store; back-bar strips, table tents, and menu clip-ons for the restaurant, hotel, and in-plant feeders; and bottle hangers for the home-delivery dairy routes. Large 17" x 22" full-color egg posters, conceived by and for the Council, have been received warmly by most of the chain-stores and independents.

An enlargement of the State Seal of Quality was developed for application to 30-dozen cases of loose-packed 100 percent candled eggs. These are for the hotels, restaurants, and other bulk users who want an identified egg of consumer-packaged quality.

Only eggs produced in New Jersey can be identified with the State Seal of Quality. This is reasonable on at least two counts. First, the program is financed by New Jersey producers through the mandatory feed tax. Second, consumers in our marketing area want New Jersey eggs, and we are doing our best to satisfy this demand.

This insistence on "New Jersey eggs only" for packing under the Seal created an early difficulty. Many of the candling and cartoning plants located in New Jersey pack eggs for chainstore accounts. Although most chains desire New Jersey eggs for their top carton sold in their New Jersey stores, source is generally not a requirement if the grade meets specifications. It can be pointed out, however, that one of the major chains is currently placing only New Jersey eggs in its top carton and has so marked the containers. Others are contemplating similar steps.

Thus, we have plants packing native and out-of-State eggs under one roof. And the question immediately is raised, "How do you know only Jersey eggs are being packed under the Seal?"

It is a licensing requirement of the division of markets that any plant packing eggs from more than one source must employ a full-time civil servant to oversee the candling operation to insure the proper identification of the eggs packaged. Four plants now have this arrangement in force, where the size of the operations demands the use of out-of-State eggs.

Other packers who used possibly 50 to 100 cases of out-of-State eggs each week purely as supplementary volume have now substituted New Jersey production. And it is obvious that our producer-retailer poses no problem on this aspect.

Our fieldmen are now making fairly regular calls on retailers. They have been helpful to the dairy manager in assisting him in the proper handling and display of eggs and offering point-of-purchase material at no cost. Those responsible for egg sales have welcomed this service and advice. Retailers have become more sympathetic to national promotions such as March Egg Month and "EGGtober." We feel sure that other States with similar programs could make the national campaigns that much more effective.

The Council's continuing advertising program embracing newspapers, radio, and television, is consumer-oriented: "Look for the State Seal of Quality on the carton--your assurance of freshness and quality." And consumers are not only looking--they're buying!

I have tried to point out that our program attempts to cover all phases of a well-rounded marketing approach--the consumer, the retailer, the packing plant, and the producer. Advertising is dissipated unless followed up by the attractive, eye-catching point-of-purchase displays at the retail level. And the producer must be kept abreast of these activities to maintain his interest and enthusiasm. Interim reports covering the progress during a stated period, titled "Promotion

Matters"--and it certainly does as far as we are concerned--are mailed to the entire industry.

Actually, we have encountered few real problems. One, concerning the out-of-State eggs, has been mentioned. Another is reluctance on the part of national and regional chains to accept the State Seal of Quality. For them, it is a real problem. They operate in many States and find it extremely difficult to identify the sources of all their eggs. But we are confident that this reluctance is temporary. They see now that our program is here to stay.

Every week, millions of consumers in our area are told of the State Seal of Quality. The chains cannot long resist consumer preference for a particular product and are watching our progress very closely. They are anxious to identify New Jersey products in their New Jersey stores for they too, are conscious of maintaining good public relations.

Have we made progress? What have been some of the positive results? Two years ago 250,000 dozen of eggs were graded weekly under the supervision of the State department of agriculture, in about 20 licensed plants. Today, upwards of 600,000 dozen are marketed under the Seal each week from 56 licensed plants. An additional 33,750 dozen are sold each week in 30-dozen cases identified with the State Seal of Quality. Trying to keep a current list of retailers handling our product is not easy. But we can account for over 2,000--over twice the number the original survey showed a year ago.

These are tangible results. The intangibles are equally as impressive. Our bureau of market news reporting is experimenting with a State Seal of Quality cartoned-egg price--a shipping point price indicative of the minimum 85 percent A quality packed. This price on sales to retailers has a validity based on volume and quality that present price reports in our area lack.

Mention was made of our staff activity during national egg promotions. It might interest the group to know that our Council approved, for the second consecutive year, an allocation of 3 percent of its annual revenue to the Poultry and Egg National Board. Closely cooperating with PENB, taking advantage of their consumer-education material, and cultivating the interest and support of the food editors in our area, particularly those representing New Jersey newspapers, and continuing our close association with the extension marketing specialists at the State university, we are promoting the use of eggs at both the national and local levels. Of course, we are promoting Jersey eggs--but the big thing to remember is that we are promoting eggs! Think of 50 States doing this job and exploiting their own home markets!

Although we have come a long way, we still have a long way to go. Proximity to the biggest market in the world is not an unmixed blessing. Many of our producers are apathetic concerning the need for applying vigorous marketing techniques and have been slow to recognize the position of New Jersey in relation to a rapidly changing national picture.

We recognize the obligation for the continuance of strong quality control activities. New Jersey has long been a producer of table eggs, and interior quality is not a primary problem. However, the elimination or reduction of stains and checks and closer attention to weights have caused concern and will require a continuing corrective effort.

At the inception of the program, most of New Jersey's production was marketed in 30-dozen loose-pack wholesale cases, with its identity naturally lost. Over 600,000 dozen are currently sold each week with the State Seal of Quality on each carton, not including those cartoned for large chain accounts.

This is almost 2½ times the volume cartoned under the State seal when the program went into effect. The placing of increased volume into consumer cartons--identified with the seal--will continue high on our list of objectives.

Merchandising efforts and the enlistment of retailer support will receive ever-increasing attention. The retailers are our customers, and we are going to satisfy their requirements--as well as the consumer's!

NEW YORK STATE TRADEMARK PROGRAM

Leslie W. Driggs
New York Department of Agriculture and Markets

New York's egg promotion endeavor using a grade label is called "The Empire State Trademark" program. It has been nicknamed the "red label" program. The reasons for the project and the problems we are trying to solve are much the same as experienced in other deficit producing States. We have the added problems of a serious lack of producer unity and the fact that the groups we work with are made up primarily of small to medium-size farms and egg packing firms scattered throughout the State. This separation of our five most important producing areas poses difficulties in getting a program off the ground and in setting up methods of inspection.

We perform inspections by licensing plant owners and employees who are trained and supervised by State department of agriculture and markets personnel. The exceptions, where a resident grader is needed, are the firms operating under the Federal-State program and those that require extensive quality improvement work at the producer level.

We will re-evaluate the project to determine the best way to prorate inspection costs as soon as the project is going full steam, with sufficient participants.

Original plans were to inaugurate the program in an eight-county section. However, many factors have arisen, suggesting that a concentrated effort in two major upstate consuming areas would be more practical and rewarding. This would be, in a sense, a pilot project, although more extensive than the test runs we are now engaged in.

One of our primary concerns, still not completely solved, is that of a standard carton design. Although we prefer the standard carton, with due recognition for the packer, we believe the program would be handicapped if we did not allow packers to use the red label in conjunction with their own brands, should they so desire. It would be foolish to tell the Tea Company they must drop the Sunnybrook line if they want to participate in the program. Our label, or at least the use of it, seems to be in a process of evolution, changing to better conform to good merchandising and artistic demands. It has changed from the standard rectangular form to a more popular design, like the potato caricature used on our new standard potato bag. Incidentally, these trademarks are registered in the office of the Secretary of State in Albany.

One of the most important results of our recent activities in the trademark program is that it has brought the department much closer to the producer and his problems. In helping to improve the shipments received at one red label plant, we graded products from all of its 18 suppliers. Where some grading showed serious problems, we followed the product back to the farm level.

On one of these farm visits, we uncovered this operation: The farm has about 15,000 birds, and in addition to stained eggs, the previous grading showed an incidence of 12 percent checks, not to mention the seven cases of cracks the farmer had segregated prior to shipment. As you can see, there are two major problems; the wrong kind of detergent is being used, and the washing operation could be likened only to a potato digger. The foam in the front washer indicated a soft-water detergent should have been used.

When there is excessive foam, the operator will almost always dunk the basket in and out of the water, causing even more cracks. Too many suds or too much foam may also cause the machine to operate inefficiently.

At the same farm we noted poor sanitary conditions in the liquid egg operation. This is a salvage deal and, if present economic conditions continue, we will see this operation in almost all farm egg packing rooms. We have worked with a few farmers on this problem and feel it is a result of their not understanding the need for proper equipment and precautionary sanitary procedures. Usually, for under $10, satisfactory equipment and methods can be installed that will handle the average producer's volume, especially if he has a home freezer. More often than not, it will save labor at the same time.

After producing, properly grading, packing, and delivering high-quality eggs, they still have to be sold. This field of merchandising, which is not strictly advertising, but might be called in-store service work, was a problem we felt necessary to learn more about before we could plan a successful program. As an example to show that successful merchandising methods are not as pat as some would have you believe, consider a metropolitan New York store that uses an old-fashioned method of mass display, cartons at the time of purchase and never sells under 70 cases per week. This store measures 35 feet by 70 feet.

We have supermarkets with 5 times the amount of sales area selling only 30 cases a week. We have checked this procedure in other consuming areas and found mass-type displays have increased sales every time they were tested. Whether we like it or not, the method has some good features and we must try to find ways to capitalize on this phenomenon.

New and improved merchandising methods must also help reverse the trend to decrease the normal egg sales area, for example by putting cartons on poor merchandising shelves or behind closed glass refrigerator doors, with the ends and the sides of the cartons facing out. Even worse, if possible, are some of the new two-shelf displays that put eggs so close to the floor the consumer has to stand on her head to reach them.

We have had considerable success in building mass displays using about 100 cartons on a low table a few feet in front of the egg sales case. In every instance, this type of display resulted in a marked sales increase, even as high as 300 percent. We did have two stipulations: The store must be air-conditioned and the display built only on high sales days. However, there is apparently no residual sales increase once the display is removed. We feel part of the increase is because it is something new and because increased sales area means increased sales.

In the last few weeks, we have become confident we are moving in the right direction and that our merchandising program will be successful. Our press releases are getting excellent coverage. We have also developed good contacts with food editors. Through tours and individual attention, we have aided these folks in obtaining material for short and feature articles.

Because of statewide meetings, many newspaper articles, farm radio programs, and emphasis on the trademark at the State fair and the resulting publicity, we are receiving a lot of requests for information on the trademark program. In addition to the many farms we have visited, often performing quality control work, we have received 12 new applications for approval of trademark operators.

The New York State Department of Commerce has pledged its support in helping us to move into the Rochester area. The chain where we have the present pilot project is going to inaugurate its own advertising campaign.

You may ask, "What kind of benefits are we getting or expecting to get from the program, and who will get these benefits?"

First, we hope to create a demand market for top-quality cartoned eggs bearing the Empire State trademark. This will aid sellers in getting the more desirable store locations and help them meet price competition. It will also encourage some farmers to increase their operations by candling, cartoning, and making store-door deliveries, adding to their income by the profits derived from these marketing functions.

Second, we expect to increase the sale of eggs at individual outlets, thereby reflecting a saving in handling costs. A first glance at this may mislead you to assume it is an insignificant figure, but the handling costs, in relation to the number of cases in the delivery, is one of the major variable cost factors in eggs today.

The third item, a premium price, was not necessarily part of our original plan and could also be loaded with all kinds of problems. The retail price at some of the stores is 6 cents higher for State trademark eggs than any of the other brands handled. This, of course, presents consumer resistance, but 3 cents of this extra markup goes directly to the packer and to his farm shippers. The dairies are charging substantial prices for their eggs delivered to the home. However, the price paid to the packers reflects some of this premium. One of these, a farm producer, packs trademark eggs which also bear the AA legend. He is receiving 5 cents over the price paid by any of the stores to which he delivers nonlabeled eggs.

Incidentally, for promotion purposes and to be sure the eggs are on the upper side of the grade A scale, our grade requires a minimum of 33-1/3 percent AA quality eggs.

Taking a long-range look, we notice at least one side effect that State programs may have. Through a concerted effort, State departments of agriculture will be improving efficiency, quality, and handling methods and getting packers and producers more accustomed to official grading procedures. Probably more often than not, operations will increase in size or merge, at any rate, making larger units.

This may answer a major problem facing the Federal-State grade labeling program. That is, many farms and small cartoning operations are not easily adaptable to the Federal grading program because of economics, the lack of industry knowledge, and the lack of sufficient supplies of top-quality eggs.

I believe that New York's and other States' grade label programs are rapidly building a firm foundation for orderly and profitable marketing of eggs.

With hard work and cooperative efforts by the U. S. Department of Agriculture and the State departments of agriculture, we are going to have a vastly improved marketing situation.

PENNSYLVANIA CERTIFIED EGGS

Alvin N. Saylor
Pennsylvania Department of Agriculture

Background of Pennsylvania Egg Marketing Programs

The $190,000,000 Pennsylvania poultry industry provides 25 percent of the total cash income from agriculture within the State, ranking second only to the dairy industry. Eggs provide $139,000,000 or 17 percent of cash receipts.

With the commercialization of the poultry industry and growth of urban population, it became necessary to enact various laws and standards which would protect both the consumer and producer in marketing eggs. On July 10, 1919, the Pennsylvania Fresh Eggs Law was passed and put into operation. Amendments to this Act in 1935 defined the meaning of the term fresh eggs as an egg with not more than 2/8 inch depth in air cell, with a visible yolk but not plainly visible or mobile, and with the white firm and clear. This definition is what we know today as a grade A egg or better. It further defined and listed a number of other terms, including Fresh Eggs, New Laid Eggs, Hennery Eggs, Strictly Fresh Eggs, or terms of similar importance as meaning the same as the term Fresh. In reality this law prohibited false advertising or false marking of eggs for the protection of both the producers and the consumers. In 1929, the bureau of markets was established by an Act which authorized the secretary of agriculture to establish voluntary minimum standards for different grades of eggs. Shortly after this, standards were established through regulation which defined the grade AA, A, B, and C quality eggs as well as the size minimums for Jumbo, Extra Large, Large, Medium, Small, and Peewee eggs. These standards can be used by anyone, and when the eggs are cartoned, eggs must meet the minimum standards as specified in the regulation. The standards, of course, were amended occasionally as time went on.

The latest change in the standards was made in 1958. This change, in addition to making a few basic corrections in the tolerances, also required that eggs, when sold in dozen or half-dozen cartons, be plainly marked with the consumer grade, the weight class, and the name and address of the producer, packer, or distributor. In the event eggs were not graded, they could not be marked by the consumer grade, and the words Not Classified would have to be imprinted on the carton along with the name and address of the producer, packer, or distributor. The department of agriculture in early 1958 had eight retail egg inspectors to enforce the Fresh Eggs Law and the egg standards. These inspectors and two supervisors checked eggs wherever they were offered for sale. Of 21,852 inspections made in 1958, there were 323 Fresh Eggs Law violations; 1,367 egg standards violations; and 1,394 carton marking violations. Corrective action was taken in all cases of violation.

The Problem

As competition from out-of-State eggs became more acute, local producers looked for ways to maintain their own markets and increase the sale of their eggs. They looked to more uniform regulations and enforcement of laws. They also began to explore the possibility of various kinds of promotional activities to help sell their eggs. Facing spirited competition from neighboring and distant egg-producing States, poultry industry leaders asked the Pennsylvania Department of Agriculture for a program which would help them maintain and expand their share of local markets. Bureau of markets analysis indicated that primary needs were a better product, more uniform grading, improved handling methods, confidence of retailers, an identifying seal, knowledge of consumer wants, and some beating on the big brass drum to let Pennsylvanians know about one of their State's best farm products.

Features of the Pennsylvania Certified Egg Program

The Pennsylvania Certified Egg Program is a Seal of Quality product backed by the Pennsylvania Department of Agriculture through its inspection system. The Certified Egg Program combines six features to make a successful market development.

1. Uniform quality.
2. Brand identification and coding.
3. Cost-cutting efficiency.
4. Dependable distribution.
5. Consumer acceptance testing.
6. Planned promotion.

Quality.--In 1958, 21 organizations asked for the voluntary egg certification plan. Bureau experts then tested chief graders and candlers for proficiency and surveyed plant methods. Approved organizations pay a fee, based on volume, to use the official Keystone seal and to receive regular, unannounced supervision of grading.

Coupled with plant supervision is enforcement of the Fresh Eggs Law and shell egg standards at retail levels. Some 22,000 retail inspections in 1958 revealed more than 3,000 violations in which corrective action was taken, including more than 100 prosecutions.

In cooperation with the Pennsylvania State Extension Service, more than 100 county-level meetings and grading schools were held in 1958, to acquaint the industry with quality techniques, grade marking regulations, and certification.

Training, education, and grading inspections at both plant and retail levels combine to make the egg program effective--to insure a quality product to the consumer.

Identification.--Pennsylvania certified eggs are sold in the brand cases or cartons of the individual distributors, but each also carries the official Keystone seal. The distributor maintains his brand pride and the consumer has the extra assurance of State supervision of the grading.

Efficiency.--The original survey for approval includes the plant's methods used in procurement, receiving, storing, grading, packaging, and shipping. Suggested corrections help the plant in adopting modern, efficient methods to cut costs.

Distribution.--Time-tested channels of distribution are utilized, including wholesalers, retail grocers, dairies, egg routemen, and roadside markets. All of the operators are advised on storage and display methods.

Testing.--A scientifically controlled test marketing, supervised by Pennsylvania State, was made in the city of York to determine consumer acceptance, in cooperation with local retailers. Results showed striking increases in demand for certified eggs, and the methods of merchandising have been applied to other areas.

Promotion.--The York test also evaluated promotion which included publicity by direct mail, radio, and TV interviews and announcements, special public displays, point-of-purchase materials, store posters, consumer pamphlets, and speeches. Sales increases were traceable to the promotion work, and recommendations were made for the use of promotional methods in other markets. The details of the market test are contained in a special report, copies of which are available upon request. We learned several important things from the York test.

1. The promotional part of the test marketing program was associated with a rather surprising relative increase in total egg consumption in York--5 percent in consumer purchases, and 14 percent in store sales. This suggests that increasing awareness of eggs brought about by the promotion program had an important impact on consumer behavior.

Differences in the relative increases of consumer purchases and store sales appear consistent in the light of sources of egg purchases. Only 20 percent of the eggs were usually purchased through stores in York. Store purchases would be most easily modified by the type of promotion program carried out in York, which was designed to influence store sales. Purchases through egg routes, dairy, delivery trucks, and other similar arrangements are often in terms of some prearranged quantity. These arrangements would be more difficult to change through promotional effort than the more impulse type of purchases through stores.

If only the store purchases of eggs were modified through a promotion program, the 14 percent increase in store sales, representing 20 percent of total consumer purchases, would amount to a 3 percent increase in total consumer purchases. The difference between 3 percent and the 5 percent increase observed in consumer purchases could easily be accounted for in supplementary purchases through sources other than the "usual" sources of egg purchases.

2. In the relatively small sample of stores carrying both certified and noncertified eggs, there was little evidence that the promotion program, during the third 4-week period, produced important differences in purchases of certified eggs in comparison with the purchases of certified eggs in the second 4-week period.

3. The mere introduction of egg certification in the second 4-week period apparently had little impact on consumer knowledge or behavior. There are several possible explanations for this. First, the test marketing program involved a relatively short period. Second, even during the relatively short test program, distribution and availability of certified eggs was low. Certified eggs were available during the test program in only 42 percent of the stores named by homemakers in the telephone interviews as the stores at which they "regularly" shopped for groceries. Certified eggs were available in only 8 percent of the stores listed by homemakers as their "most often used source of eggs." Third, the relative stability of the usual source of eggs indicates that homemakers had already found reasonably satisfactory sources and would, therefore, not be expected to change in a short time.

4. The promotion program in York produced a high level of awareness of eggs (over half of the housewives were aware of the program) but was less successful in creating awareness specifically of the certification program.

Results

The Pennsylvania Certified Egg Program began in April 1958. At the end of October 1959, there were 23 egg grading plants packing 64,885 cases per month. There are 10 plant applications pending.

Retail stores handling certified eggs report favorable results. One chain store switched entirely to Pennsylvania certified eggs and reports a very satisfactory growth in egg sales, while other chains are using the certified eggs as an additional line of eggs. Several chains have requested the quality control sponsored by the certified program, but are reluctant to use the Pennsylvania certification seal.

Much of the expanded sales of the Pennsylvania certified eggs came through cooperative grocers' associations, independent supermarkets, and dairies. Each of these outlets looking for a regular supply of uniform quality eggs found the Pennsylvania certified eggs could be merchandised with confidence.

Although it is impossible to measure all results in dollars and cents, fewer complaints from consumers and a continual increase in sales indicate, at least to some extent, consumer satisfaction.

Although the present results of the program are gratifying, there still remain many improvements to be made in quality control, distribution and promotion techniques, and efficiencies to be gained in production and marketing. Marketing of farm products remains a dynamic industry. Our biggest problem is, "Where do we go from here?"

ACCOMPLISHMENTS IN IMPROVING POULTRY PROCESSING PLANTS IN NORTH CAROLINA

Charles B. Elks
North Carolina Department of Agriculture

The poultry processing industry in North Carolina has made phenomenal growth. This growth has come from plants ranging from small ones housed in shacks that did not even meet the bare necessities, to modern poultry plants with ceramic tile walls and modern equipment. Poultry processing in North Carolina has become big business even in some of the smaller plants. The smaller plants are having to operate efficiently to compete with the larger ones. Our processing plants in North Carolina are operating efficiently. The poultry and egg section of the division of markets feels that it has had a part in this phenomenal growth. In explaining to you the accomplishments of improving poultry processing in North Carolina, I would like to take you back a few years and explain to you where we were and how we have progressed over the past 15 or 20 years.

In 1940, there were 4,400,000 broilers produced in North Carolina. In 1942, the first poultry processing plant was started that had a chain operation. By 1944, there were 3 chain-operated plants. At the end of World War II, broiler production had increased to approximately 18 million. Beginning in 1946, broiler production started a constant annual increase. During the next 2 years, the number of processing plants had increased to 14 modern plants and numerous smaller plants.

The poultry processing industry realized much growth during the period from 1940 to 1950. By 1950, broiler production was up to approximately 28 million. The industry realized that consumers had begun to demand high-quality poultry processed under sanitary conditions and packaged in an acceptable manner. By the end of 1950, there were 38 chain-operated plants and about 100 other small hand-operated processing plants located throughout the State. As a result of these growing pains, the division of markets decided to employ a specialist whose primary job would be to work closely with the processors, assisting them in marketing problems, including drawing detailed plans for new plants and plants which were undergoing remodeling programs.

During 1950 and 1951, this specialist drew plans for eight modern processing plants and gave technical assistance in remodeling or enlarging seven other similar plants. In 1952-1953, plans were drawn for five new processing plants and the remodeling of 14 existing plants. At the time these plants were being remodeled and constructed, one of the major objectives was efficiency.

To illustrate, plans were drawn to remodel and enlarge a plant that had a capacity for processing 1,200 broilers per hour. After remodeling, the plant had a capacity of 2,500 per hour. Before remodeling this plant employed 63 people and after remodeling it employed only 95 people, although its capacity was more than doubled. It is hard to place a monetary value on the results of improvements such as are made at some of the plants. One important factor which must be considered is that the individual plant owner is not the only one who derives the benefits. The poultry producer, as well as the consumer, also profits. The producer has a larger local market for live birds and the consumer can buy a cleaner and more wholesome bird.

To convey some idea of the processor's opinion of the technical assistance which is being rendered, I quote from a letter received from one of the owners of the processing plants:

> "The place just doesn't seem the same. We are processing almost twice as many birds per hour as we were 3 months ago, yet we have had to hire only a few more hands. I firmly believe our operating efficiency has improved at least 75 percent. Your help is invaluable to the entire poultry industry and I am sure that through our cooperative efforts, the poultry industry in North Carolina will continue to progress."

In 1953, Tar Heel turkey growers stood to lose several thousand dollars through their stepped-up production. During this period, specialists in the poultry section worked closely with interested processing groups. In addition to the assistance given those operators already engaged in the processing of turkeys, this specialist was instrumental in the organization of a group of turkey growers in eastern North Carolina who financed and built a new turkey processing plant in their local area. A set of detailed plans was drawn, preparatory to the construction of the plant. Although the turkey marketing season was well underway when operations were begun in this new plant, over 3½ million pounds of turkeys were processed in it before the season ended. It is conservatively estimated that as a result of this new plant, which permitted growers to market their turkeys in their own locality, the growers received an average of 5 cents per pound more for the 3½ million pounds processed than they would have received through other rather distant markets.

During 1954 and 1955, plans were drawn for remodeling six plants and for the construction of one new plant. The cost of remodeling these six plants was approximately $135,000. It was estimated that efficiency in processing by the plants would amount to 1/2 cent per pound on all poultry processed, permitting a saving of $120,000 annually. By 1957, poultry production was up to 70 million birds. During 1957 and 1958, 34 floor plans were drawn. The specialist accompanied U. S. Department of Agriculture veterinarians on 29 surveys of plants. There are now 50 plants in North Carolina and 31 of these are under official inspection.

The marketing specialist in North Carolina works closely with the poultry processor in drawing plans for new processing plants, drawing plans for remodeling existing plants, and assisting with technical problems that arise in the industry.

Procedures vary in each case, but let us go through a typical procedure to show the various ways we may assist in the processing and marketing of poultry. Our services are provided strictly on a voluntary basis and are available to anyone who has a direct interest in the marketing of poultry. A request will come to us from any number of sources--processors, feed dealers, agricultural workers, financial interests, industrial development representatives--for assistance in starting a processing plant. We then launch a thorough and extensive investigation to determine if a plant would be advisable. We consider such things as the number of broilers now grown in the area and the potential for growing broilers there, the probable effect on the marketing picture for the area, the potential market outlets, the financing that can be arranged, availability of labor and personnel, water supply, sewage and water disposal, cost of power, taxes, building codes and zoning laws, and any other factor that could influence the operation of the plant. Of course, most of the leg work is done by interested persons, much of it before we are contacted.

When it is determined that a processing plant would be advisable, we draw a floor plan and formulate a list of specifications according to AMS PY-Instruction No. 915-1, "Information Required on Blue Prints and Accompanying Specifications for Poultry Plants." The principles we follow in developing a plan are:

1. An orderly movement of materials through the plant. We like to have the live birds enter at one end with the edible products leaving at the other, and the inedible products leaving at one side of the building.

2. Overall layout for a minimum of building costs without materially sacrificing efficiency.

3. Arranging the equipment as nearly in a straight line as possible, and avoiding long lengths of unused conveyor track.

4. Arranging the equipment for maximum ease of cleaning and adjusting.

5. The use of the most efficient equipment that is available.

6. Separation of the operations that should be separate for maximum sanitation.

7. Recommending a type of construction and kind of building material that would lend itself to maximum sanitation.

8. Employee facilities for reasonable comfort of the workers and for maximum sanitation procedures.

9. Provision, insofar as possible, of a practical way for future expansion with a minimum of tearing out and moving of the more expensive installation.

10. Avoid "cross currents" of employees, products, or materials.

11. The use of conveyors, forklifts, dollies, and other materials-handling equipment to foster the most efficient handling of materials.

12. If a plant has made application for inspection, our specialist visits the plant with the area supervisor of the inspection branch that makes the survey. If a blueprint has already been made, the supervisor considers it in his survey and revises it if necessary. A new plan is then drawn by the specialist, including all the recommendstions made by the supervisor. This plan then can be sent to Washington for approval.

After we have determined that a processing plant is feasible and the size of the plant needed, we start developing a plan that will suit the persons and situations involved. Normally, we make several sketches of proposed layouts and confer with interested parties on these sketches, going over very carefully the advantages and disadvantages of each, combining the good points of each, eliminating weaknesses of each, until we arrive at a plan that seems to be the best all the way around. Then we go to the drawing board and draw the preliminary plan to scale, including all the accessory rooms and compartments and including enough detail to show if the plan is workable. After several conferences and consultations, and after several revisions of plans, we develop a plan that embodies the best thinking and the latest technical advances that we, the processors, and others can apply to the particular situation.

We add the necessary details, have blueprints made, and furnish a minimum number to the processor and additional copies to interested parties at cost.

Assisting an existing plant to enlarge or to remodel is somewhat different from assisting a new one. When we get a request for assistance in remodeling or enlarging, the first thing we do is get complete information on what the operator now has. In some cases, we have blueprints or complete measurements on file. In other cases, we must make complete measurements of the plant. We confer with him about what he wants, making suggestions and helping him solidify his thinking if he has not already done so. We then proceed to develop a workable plan, following as much as possible the principles outlined earlier, and discussing with him any ideas we may have or that he may present as the plan develops.

In summarizing, we find a poultry industry in North Carolina which has grown from an annual production in 1940 of 4,400,000 broilers to 134,000,000 broilers in 1958. We also find that we had only 1 or 2 chain-operated plants in the early 1940's as compared to 50 modern poultry plants in 1958. We realize that this growth has come from the cooperation of everyone concerned, and that in order to continue to progress and increase efficiency we all have to keep our eyes open and be constantly looking for ways of improvement.

A CASE STUDY OF HOW ASSISTANCE PROVIDED UNDER A MATCHING FUND PROJECT HELPED A LOUISIANA POULTRY PROCESSOR TO IMPROVE EFFICIENCY

Ralph Germany
Louisiana Department of Agriculture and Immigration

When I started to prepare this paper, I wondered why Louisiana was being called on to present a talk on poultry processing. I'm sure many of you, from States representing a much greater volume of production and processing than we have, are also wondering about this. It was explained that it was not necessarily the volume a State has nor the size of the plant, but the work being done through the matching fund poultry project.

It seems that it would be worthwhile to briefly mention the broiler industry in the State, its growth and volume, and the history of the development of the processing plants.

The growth of broiler production and the development of processing plants in Louisiana have taken place over the last 8 years. Production was figured at about 2 million birds in 1952. This figure doubled each year until we reached a peak of some 18 million. Since that time increases have been slow. For the past couple of years Louisiana has produced about 21 or 22 million birds annually.

The development of processing plants followed right along with production. At this time we have only eight plants with a chain operation that are processing any volume to speak of. There are four smaller plants within the 5,000-a-week capacity. These are hard-scald operations.

Of these plants, only three are under U. S. Department of Agriculture inspection, three are qualified, and the remaining six would have to make major changes to qualify. Fortunately four of these belong to the small 5,000-bird class.

Our market news shows that these processors are slaughtering between 30 and 32 million birds annually.

In selecting a case study, my thoughts turned to one plant in particular. We feel close to this one because we have watched it grow from a 2,000-bird-a-week hard-scald operation to a modern U. S. Department of Agriculture qualified processing plant. It is in itself certainly a success story.

When the first of our plants was being constructed, this processor made inquiries to the department about poultry processing. He did not know too much about the processing business and assumed that since we had helped to organize the other two that we must know something of processing. The owner knew that his operation would some day become obsolete. He wanted to know what he could and should do.

At this time, he was killing for a few small wholesale accounts, and also retailing in the front section of the building. His was the typical hard-scald operation. One of his brothers had established a route through some of the small towns nearby. Volume was so that they had to purchase poultry from plants in Mississippi to fill their needs. After discussing certain aspects, he decided to concentrate on wholesaling and do away with his retail business. He was able to get the use of the alley on the side of the building. This provided a means of unloading the poultry to the rear and off the sidewalk. He added a section on the rear of the building, which was used as a holding and killing room. The display box or counter in the front was removed, providing more room for ice storage and packaging. These improvements were good but did not afford him any increase in volume to speak of, so it wasn't long before he decided something must be done. I think the next step he made was one that destined him to become a poultry processor.

We talked of a new, modern plant, but he did not have a suitable location, or finances, nor did he choose to go too deeply in debt.

After discussing the situation, he decided to close in the holding room, remove certain partitions, and install a small line. A specialist with the department contacted a representative of an equipment company and was able to locate a used line and several good used pieces of equipment.

Department specialists assisted the processor in training labor and making minor changes in the packing operation, and so forth. The processor wanted to grade his poultry, so we worked in this area. He was now able to process 1,200 birds per hour. It wasn't ideal, for conditions were crowded, but with limited capital and space the best had been done. He could add equipment and make other changes as he could afford to. He obtained permission to add on the side of the building, this permitting him to move his picking line over and give him more room. He added a wing, neck, and hock scalder and another multi-matic machine. He also put in an offal room with a disposal system. This greatly improved efficiency and reduced cleanup time. His giblet operation was not efficient, so we suggested he use some type of conveyor to keep from bringing the pans to the wrappers. A metal trough using a water flush was rigged up. He was then able to send the giblets directly to the wrappers, who, in turn, stuffed on the line.

Even though he was keeping pace and making money he, like all processors, thought of a new modern plant. The industry was in a turmoil over compulsory inspection. The processor was now in a position to buy property and was seriously thinking of constructing a new plant.

We suggested that he let us call in specialists of the U. S. Department of Agriculture Transportation and Facilities Research Division and request their services. I must add here that we have always received excellent cooperation from these fellows. We visited the plant, and discussed the processor's ideas and needs, and the availability of locations.

After ascertaining the size of the probable lot, the Washington specialists began work on a set of plans. Upon completion of the plans and a writeup, they sent them to me and I in turn discussed them with the processor. He purchased the corner lot adjoining him. A contractor was called in and, with these plans as a guide, a plan was drawn up and costs determined.

We suggested he build to meet U. S. Department of Agriculture inspection requirements. Department specialists called in the area veterinarian in charge and the plans were submitted for approval.

The plant does not operate under inspection at this time. It may never go under inspection, but should the need arise the plant is qualified. It is now processing about 75,000 birds weekly.

We feel that we have assisted this processor and can see the results of these efforts. It should be pointed out that in other instances we have been called on by groups to assist them. They may contemplate constructing a plant. After preparing figures on construction, equipment, and so forth, and attending meetings with bankers and other interested persons, the group decides to abandon the whole idea. All of this has consumed time and sometimes a good bit of leg work has been put in, yet in the end there are no net results to show. But, of course, you have to stand by ready to assist when called on.

PROBLEMS OF SELECTING EQUIPMENT FOR EGG GRADING AND PACKING PLANTS

John A. Hamann, AMS, U. S. Department of Agriculture

The egg grading and packing operation is the heart of the plant. The equipment that is selected for this work can be a key to the plant's overall operating efficiency.

Significant problems frequently confronting industry in wise selection of equipment are: (1) Facility design--adaptability of the building to effective combinations of egg grading and packing equipment and use of efficient materials-handling methods; (2) cost--initial investment and maintenance cost or rental and service charges; (3) expandability--plant layout that permits expansion at a minimum alteration cost and minimum disruption of operations.

If careful consideration is given to the overall plant layout (including aisle widths, column location, work space, flow of product, and so forth), the kind and amount of grading that is required, and the basic requirements and capabilities of manual, semiautomatic, and automatic equipment, considerable time, money, and satisfaction can be gained.

The Grading and Packing Area

The grading and packing area should contain adequate floor space for: (1) Stationary equipment, (2) work stations, (3) temporary storage of eggs and packing materials, and (4) aisles. If eggs are examined individually before a grading light of the typical manual grading line, efficient layout principles suggest a space of approximately 5½ by 7½ feet for each grading station. This space includes provision for the grading and packaging work station as well as a 3-foot access aisle for workers. Service aisles for movement of materials should not be less than 8 feet wide if mechanized materials-handling equipment is used.

Space requirements for automatic packaging equipment used in conjunction with semiautomatic grading equipment calls for much more floor space and differs considerably as to overall dimensions. For example, the 20-case-per-hour semiautomatic grading and automatic packaging line recently developed by the Department requires from approximately 13 x 22 to 22 x 22 feet without aisle space.

A minimum of 200 square feet of floor space should be provided for the cartoned egg packing station. This amount, in proper dimensions, should be adequate for a packing table, two workers, and five 3'x 4' skids for packed eggs. In addition, it provides an access aisle for personnel and materials.

The packing materials makeup area (main floor, mezzanine, or second floor) should be provided with a minimum of 100 square feet of floor space for container makeup equipment, a backlog of madeup cartons and cases, and a small reserve of materials. Within reason, the overall dimensions of the grading and packing area should be such as to make possible a change to new or improved equipment without requiring temporary stoppage of operations.

Grading Room Equipment

There are many combinations of equipment arranged into egg grading systems that are available for either the operator just starting in the business or the experienced operator planning expansion. Egg grading equipment currently available does not actually grade, but rather provides one or more mechanical aids to the grader and packer for performing their various tasks. They include materials-handling and egg conveyors, automatic cleaners, sizers, tabulators, carton makeup and dispensing units, packagers, and carton closers. Basically, the main factors to consider in any of these is the efficiency of the mechanical devices for reducing the number of decisions and motions required of the egg grader, and the effect they have on worker fatigue, quality of workmanship, and quantity of output. Frequently, when equipment is selected without careful consideration of these factors, increased effectiveness is not the result; instead, added overhead and maintenance cost, not in keeping with the small increase in production, is the final outcome. For example, grading lines are presently coming onto the market that can provide economies in grading labor when the ungraded product is of a uniform high quality. However, if product quality is poor or irregular, the quality of the grader's workmanship generally decreases if a high production rate is maintained. Regardless of whether the simplest or the most complex mechanized egg grading and packing system is selected, there are certain fundamentals that should be considered in the selection and installation of the equipment. They are:

1. Grading benches for manual grading should have egg candling lights that provide sufficient light at the aperture to illuminate the content of brown or white eggs for interior quality evaluation. A case light, generally a part of the candling light, for detecting dirty shells should be sufficient for this purpose without causing distraction to the candling operation. The candling aperture should be at the elbow height of the grader and at least 8 inches above the eggs being graded.

2. Each grading bench should be equipped with an individual egg scale, if eggs are not automatically sized for the grader.

3. Automatic sizing equipment should be of a type that weighs eggs accurately while they are being moved about at various handling speeds.

4. Grading benches should be equipped with cartoning shelves, carton packing material, supply chutes, bulk pack shelves or racks, and reject and undergrade shelves or racks within convenient reach of the grader.

5. The grading bench should be so arranged as to afford the shortest reaches to the most predominant grades.

6. Uncomplicated automatic grade tabulating and recording equipment is recommended for each bench in plants where a "buying on a graded basis" program is in effect. Thus, record keeping and maintenance are reduced to a minimum and accounting is more accurate.

7. Each grading bench should be equipped with a combination of conveyors or chutes that deliver ungraded eggs and packing materials to the grader and move graded and packaged product away from the grader automatically, at a rate determined by the grader. Thus, the time spent in obtaining product and materials as well as grader "wait" time can be kept at a minimum.

8. If mass viewing devices that move groups of eggs over a light source are used, light rays should be deflected away from the grader's eyes. The lighting device should be so constructed that light rays are prefocused and can be adjusted only by management.

9. Mechanical equipment for grading and packing eggs should include the following features:

   a. Egg receiving trays should be equipped with cushioned corners and edges.

   b. Receiving or packing trays should be of construction and capacity that prevent eggs from piling up.

   c. Gentle handling should be given individual eggs, especially when moving at high speeds.

   d. Small-end-down positioning of eggs being placed into cartons or filler-flats.

   e. Accurate mechanical tabulation and recording system.

   f. Facilities for accurately and rapidly checking worker and machine performance.

   g. Stop and start switches convenient to key workers.

   h. Maximum worker safety.

   i. Ready accessibility to all moving parts for service, replacement, and cleanup.

    j. Unit replacement for complex electrical circuits that are readily accessible.

    k. A comprehensive maintenance service and cleanup schedule.

10. Regardless of whether egg grading and equipment is manual or automatic, the following are essential:

    a. The number of workers required to man the grading line should be as nearly as possible in balance with operations complementary to the grading operation; that is, carton supply and makeup, egg supply, carton packing and so forth.

    b. The walking distance and reach required to work at or serve each unit of the line should be at a minimum.

    c. The quality of product to be handled should be suited to the capabilities of the equipment; that is, eggs with a high incidence of thin or checked shells should not be submitted to mechanical handling nor should irregular quality be submitted to high speed semiautomatic grading devices.

The selection of egg grading and packing lines, manual, semiautomatic, automatic, or in combination, should be governed by the volume of product handled, the type of package and amount of grading required, the range of quality of product, the ownership and operating cost of the equipment, and the most effective utilization of plant floor space and total manpower requirements.

Representatives of equipment manufacturers should be consulted to assist in the determination of performance and equipment costs. Caution should be exercised in selecting equipment solely on the basis of original cost. Frequently, in a rapidly growing plant, a higher first cost may in the long run provide more economical handling methods because of the flexibility and the ability to expand with a minimum of plant alterations and shutdown time.

INCREASING EFFICIENCY OF EGG PACKING PLANTS IN VIRGINIA

E. C. Garland, Jr.
Virginia Department of Agriculture and Immigration

Small margins of profit have made the egg industry cost-conscious. More and more, management of egg packing plants is seeking means of reducing costs. Although materials-handling surveys are relatively new in Virginia's egg industry, their effectiveness in improving efficiency and reducing the cost of packing eggs is apparent. Through the use of materials-handling and cost studies, over the past 3 years, an estimated saving of 1/4 cent per dozen has been realized.

The materials-handling and cost studies that were conducted this summer with Virginia egg packing plants revealed that many marketing cost problems still plague management. These are: (1) Pickup route cost, (2) egg quality control, (3) rising labor cost, (4) rising materials cost, and (5) automation.

Since a number of Virginia egg packing plants use trucks to pick up their supply of eggs, complete time and cost studies were made of each route. In addition, charted route maps were made to reveal the area covered by the pickup trucks. This information made it possible to combine routes, eliminate overlapping routes. reschedule pickups, establish a central pickup point for several small producers, and keep an up-to-date pickup egg route system.

The studies in Virginia plants revealed that the average hand candler will candle a 30-dozen case of good-quality eggs in 11 minutes; and that a 30-dozen case of eggs, averaging 60 percent grade A, takes 15.6 minutes to candle. In labor cost, this represents approximately an 8-cent difference. In addition to this increase in labor cost for handling low-quality eggs, management also receives a low market price for the eggs. Consequently, good egg quality is a necessity for the success of any egg packing plant.

Labor in Virginia egg packing plants represents approximately one-fourth of the total cost. The studies indicated that excessive and poorly trained labor was being utilized in the majority of the plants. By assigning definite responsibilities for management, increasing the efficiency of labor through better training, and improving coordination between labor and management, a saving of up to 2 cents per dozen eggs packed was realized in one plant. With these results, it is definitely apparent that management must give more attention to the careful selection and training of plant labor to attain maximum efficiency.

Over the last 3 years, major materials cost increased from 7 to 8 cents per 30 dozen cartoned eggs. This cost declined slightly in 1959, apparently through adherence to the following recommendations: (1) The elimination of rough handling of empty cases,(2) provision of a satisfactory storage area for materials, and (3) the removal of excess major materials from the operating area.

Virginia egg packing plants shifting to automation soon found that it was not practical or efficient to candle poor-quality eggs over automatic equipment. Therefore, management found it necessary to employ hand candlers to handle the poor-quality eggs. The end result is higher processing costs because of management's inability to attain maximum labor utilization and efficiency in such a dual candling process.

A preliminary study was completed this summer to compare cost of machine grading and hand grading eggs.

It was found that with trained labor, good quality eggs, and sufficient volume, eggs could be candled and packed 1/2 cent per dozen cheaper by fully automatic machines than by the conventional hand candling system. The study also revealed that the fully automatic machines were cheaper than the semiautomatic machines.

With more experience, automation will bring a saving to the Virginia egg industry. However, it was found that management of egg packing plants must exercise greater responsibilities to train machine operators and maintenance personnel, designate individual job responsibility, and provide plant facilities which will assure a smooth flow of the product through the plant without delays or excessive handling.

Constant attention to and supervision of marketing cost is one of our present-day marketing tools for success. Placing marketing cost in its proper category of responsibility by management will help our egg marketing plants meet the battle of competition. Our studies show that Virginia egg packing plants are well on their way to meeting the challenge of market competition.

WHAT WE ARE DOING IN KANSAS

David M. Bartholomew
Kansas State Board of Agriculture

Our office has felt for a good many years that the egg packing plants in Kansas needed help to increase their efficiency. We have been of the opinion that those firms which are going to survive would certainly have to cut their costs by increasing their efficiency and improving their plants. We have consequently directed a concentrated effort toward this end during the last 5 years. We are proud of the fact that those plants which have requested our assistance in improving the efficiency of their operations are among the better plants in the State today. Furthermore, they are among the plants that are paying the highest return to the producers for their eggs.

Since this project has been carried on during the last 5 years, it has necessarily changed in its organization and approach. And those various projects about which I am going to report to you have been handled in slightly different ways in most cases. In general, this activity has been organized in the following manner. Personnel of this office through their normal means of contact with the various egg packing agencies of the State have offered assistance in the form of help in planning a remodeling or rebuilding program in the event that they should desire to do so. Suggestions are made at that time as to some of the most obvious things that could be done to improve their facilities and efficiency. Usually this starts the manager or owner to thinking about the problem. It may be a short time or it may be a long time later that he reminds us of our offer and asks for specific help along this line. We then make a special effort to visit with that manager or owner to learn specific details as to what he wants to accomplish, offering our suggestions about what we think could and should be accomplished, and then pooling our ideas to arrive at a workable plan.

From him we also secure the dimensions of the building he wishes to remodel or of the building he wishes to build. If he is remodeling the present building, we get exact measurements of the entire building involved and draw a sketch while we are on the location. In the sketch we show all existing walls, doors, windows, ceiling height, location of electrical outlets and supply of power, sewer lines, water lines, streets and alleys, and other pertinent data from which we may start.

Whenever we set out on one of these plant facilities planning projects, we always make sure we have with us the U. S. Department of Agriculture regulations governing the grading and inspection of shell eggs and the regulations governing the grading and inspection of egg products, whichever may be involved. We also take along the U. S. Department of Agriculture publication called "Candling, Sizing, Packing and Material Handling Equipment and Methods Used in Egg Assembly Plants;" the leaflet reprinted from Agricultural Marketing, called, " A Design for a Commercial Egg Grading and Packing Plant;" the Agricultural Marketing Service's leaflet called "Layout and Description of a Small-Scale Egg Breaking Operation;" the U. S. Department of Agriculture leaflet entitled "Egg Assembly Plant Layout" and its accompanying suggested drawing; and another leaflet from U. S. Department of Agriculture entitled "Pallet System Cuts Egg Handling Costs." We find that reviewing these different leaflets and bulletins brings to mind certain details which we might have overlooked if we had not brought ourselves up to date.

We also fortify ourselves with a careful selection of all the published material on egg handling and egg processing machinery available. If new equipment is indicated in the new plant arrangement, it has always been helpful to have an assortment of materials with us concerning those products which are available.

Next we draw a sketch to scale showing all of the details which we have learned in our original plant survey. Then, keeping in mind the limitations and goals which the manager or owner has previously outlined, we start to sketch in possible plant layouts in accordance with his recommendations.

Often it appears to us that there is more than one possible good plant layout. If this situation prevails, we take other pieces of paper upon which we sketch these variations of layout and traffic flow to the same scale that the original sketch was made, with the idea of overlaying them on the original to show the variations that are possible.

Then we go back into conference with the personnel involved to determine which one of these they like and in what ways we need to change it. After receiving their opinions and ideas and thinking them over again ourselves, we draw up a new complete sketch of the building with the layout as we have finally decided. This finished sketch shows all of the existing walls, and the walls which we may have decided to change; the walls inside the building which we may have removed are shown as being removed, the walls which we may have decided to build are shown as being in place, any changes in doors or windows are indicated, any changes in sewer lines, water lines, and electric lines are shown, and any additions to the building are shown.

We may have already learned from the person involved what kind of equipment he has decided upon. We have previously visited with him about what is available and what costs are involved in the different kinds of commercial egg grading or processing equipment. If he is still undecided at this point, we will show him on the sketch how the different kinds could be laid out. From here it is usually an easy decision as to which kind of equipment he feels would suit him best.

Once our sketch is completed to the satisfaction of the firm involved and ourselves, we proceed to itemize, step by step, the different changes that will have to be made, the specifications that will have to be met, and the recommended revisions that will be necessary to have the most efficient, best operating plant that we feel can be had.

In most situations where extensive remodeling or building is indicated, we have sent a sketch of our layout along with the recommendations and changes indicated to the Transportation and Facilities Research Division of the U. S. Department of Agriculture in Washington for further comment and suggestions. We have always received the best of cooperation. In this sort of arrangement they have always come forth with very worthwhile suggestions and in some cases recommendations which we have overlooked or to which we have not given enough serious consideration. When the sketch and recommendations come back to us from Washington, we go over them once again in minute detail with the firm involved. Any further changes they may have decided to make are incorporated at this time and the sketch is taken to an engineer or architect, who draws up the detailed plans for remodeling or building.

Cooperating with personnel from our office has been our Federal-State supervisor for poultry and egg grading in Kansas, who has been extremely helpful to us in this sort of plant facilities work. It is this kind of cooperation which has made us thankful that there is such a thing as the Federal-State cooperative agreement for poultry and egg grading work in the State. But it has not been a one-way street either, for it so happens that virtually all the plants which have asked for help have either been under the program of Federal-State grading service, or later, after the remodeling or building programs have been completed, have decided to come into the program. With this sort of service to the plants, it has been an easy matter for them to receive plant approval on their facilities and on their total operation.

As a result of such projects, the firms involved have been able to reduce the costs of their candling or breaking operation, as the case may be. They have been able to pay the difference to the producers in the form of higher paying prices in some cases or simply being able to remain competitive with other paying prices in the area in other cases.

One of the firms involved which installed a breaking room has been able to return quite consistently $1 per case more to the producer than they were able to return when they simply had to sell the eggs to other egg processing or breaking firms. And in the case of a new plant in the northwest part of the State, it was the difference between having an egg market and not having an egg market to those producers in that entire area. True, there were small produce buyers and there were producers who were able to make arrangements to transport their eggs to the Denver market. But there still was not a consistent or well organized marketing program such as we have now with the formation of a new company to handle eggs and pay on a graded basis. This has meant a return of stability to a very unstabilized egg situation in practically one-fourth of the State. The producers now selling to this market and producing consistently high quality are receiving considerably more than their cost of production, even when prices are low. The firm now has a breaking operation, which has stabilized the situation even further, and it has been a very rewarding experience for us to have been able to help develop the operation and plan the facilities.

A project of this sort is a continuing project. We are consistently receiving information of new facilities, new ideas for handling eggs, new methods of plant operation, and new techniques to reduce candling costs. We are certain to have further requests for our help along this line.

MAKING MARKET NEWS FIT INDUSTRY'S NEEDS

W. D. Moore, Jr., Southern States Cooperative

Accurate, descriptive, and unbiased reporting of price information and market conditions for various farm products is becoming increasingly important. In a rapidly changing agriculture, farmers and other members of the production and marketing team must have such facts as a basis for decision-making.

It is imperative, therefore, that the present methods of market news reporting be subjected to continuous review and study to determine whether the reporting system is serving the needs of buyers and sellers of farm commodities. Among the more important considerations are: (1) Changing conditions in agricultural production and marketing, and (2) changing patterns in purchasing and retailing.

Some of the dynamic changes which affect today's market reporting needs are:

(1) Integration in agriculture.
(2) Contract farming.
(3) The trend toward commercialization of the farm enterprise and the development of areas of concentrated production of certain farm products.
(4) Volume buying of farm commodities by a relatively small number of major buyers.
(5) The trend toward selling direct to retailers who estimate in advance the demand of their customers for a particular product based on the retailer's plans for merchandising the product in his store.
(6) The growing use of formulas using retail price as a basis for determining the price of a given product to the retailer.

Integration and contract farming as practiced in the poultry industry, for example, pose particular problems for the market reporter, the farmer, and the contractor.

Contracts made between farmers and contractors generally are tied in some way to the market price of the commodity being produced on the day the commodity is sold. Tremendous cash investments are made by contractors in production items (feed, chicks, and so forth), and considerable capital investment in housing and equipment is required of the farmer. Sound economics dictate that these investments be protected by accurate price reporting. In fact, it is essential in negotiating daily sales and in maintaining continuous farmer-contractor relationships.

As more and more of a given product is produced under a contractual arrangement, it becomes increasingly difficult for the market reporter to establish a true market value for the product. Under the present market news reporting philosophy, only actual sales at a definite price are reported. That is to say, he is reporting the market and not making the market.

A situation has been created in broiler price reporting in Virginia, for example, in which as much as 70 percent or more of one day's sales may be reported at "undetermined prices." These broilers are moving to market at an unknown price. Payment will be made on the basis of the established market price for that day in Virginia, or some other area, or on the week's average price, or some other formula based on the market report. Moreover, under such a system, one or two sales that represent only a fraction of the broiler movement can set the price for the 70 percent or more of the broilers going to market under some type of contractual arrangement.

This problem will spread to other farm commodities as the trend toward contract farming expands in commercial eggs and in hog production.

As commercialization and large volume production of farm products continue, the potential profit margin has a tendency to decline. This fact alone highlights the need for establishing a "true" market value for the product and the dire need to estimate probable future demand and market value. The producer, the contractor, and the processor of the commodity need such information as a guideline on which to base their future production and marketing programs.

Under today's system of volume food purchasing and retailing, there are fewer buyers of agricultural products. In turn, this tends to limit the selling opportunities of farmers. The final result is that the farmer's bargaining power is weakened. Therefore, accurate and complete price information is important to the farmer in evaluating the probable market value of his product.

With more and more sales being made direct to retail outlets, the reporting of retail prices as well as wholesale prices becomes more important. Retailers normally project their needs for a given product for weeks and even months in advance. Thus, it might be well to consider whether future market reporting might not include contacts with chainstores and other volume buyers to determine their merchandising plans for the commodity in question.

This would be a rather complicated effort on the part of the Market News Service and one that would entail considerable additional expense. Nevertheless, agricultural selling has become complicated. The job of reporting accurate, descriptive market conditions, which will adequately serve the needs of our farm people, is necessarily going to become more complicated and costly.

Retail price reporting is becoming more of a useful tool to agricultural marketing, because more of our sellers of farm products are using retail prices as their basis to price the products to the retailers. Poultry and egg cooperatives in the Pacific Northwest have been pacesetters in this practice for several years. A good example in most of the country is the development of the 29-cent broiler promotion as a store traffic builder. Another example we can cite is the use of retail prices in apple marketing. We have some apple packers in Virginia who have developed formulas using retail prices as a basis of determining the price at which the product should be offered to the retailer, and the net price on a per bushel basis that the farmer gets. It is quite possible that retail pricing could become more important than our present wholesale pricing effort.

There are new horizons which must be explored to meet these changing conditions. Up to now, it appears that we may have been compromising the quality of the Market News Service for the cost of this service. With what has been happening to farm prices in the last few years as background, I question how long we can continue to compromise the effectiveness and value of this important service to agriculture.

In the past, the Market News Service has not had close, coordinated understanding and support from the people affected by the reports. A new approach to government-industry relations in this field is being explored in Virginia with the appointment of a new committee by the Virginia Egg Council to work with the Market News Service on the problem of egg price reporting.

More government-commodity committees of this type may be the answer in helping the Market News Service keep abreast of changing conditions and needs of modern agribusiness farming.

This is not to say that the reporting service has not done a good job in the past within the limits of its resources. Yet, one has only to look at what has happened to the Urner-Barry Report of the New York egg market and the operation of the New York Egg Exchange to see that once-adequate reporting systems can quickly become antiquated and fail to reflect actual conditions that adversely affect an entire industry.

All of you no doubt have seen the article in the September issue of Farm Journal by Claude W. Gifford, Executive Editor, entitled "The Men Who Set Your Egg Prices." The caption reads: "Unbelievable, but a handful of traders selling a handful of eggs largely decide what you are paid. And they get 'the word' from one man!"

Mr. Gifford has outlined the facts for us. According to studies made by the U. S. Department of Agriculture, the same general system is used in arriving at market prices on eggs in Chicago, Cincinnati, and other terminal markets. The industry has continued to use these market prices because they have no better basis for negotiating daily sales.

In the November 11 issue of Poultry Times, on the front page, appear these headlines: "Survey Reveals Market Prices Not Reflecting Supply-Demand Factors.... Processors State Auction Could Establish True Mart." This article is written by Bob Seymour of the Times' staff. In this article, he reports on conversations with processors in Georgia as to how they arrive at the figures they give Market News Service. He received many different answers. Some typical ones are: (1) "We base the figures on what we have the chickens sold for." (2) "According to the chickens we need. We also consider the supply and demand factor." (3) "What live haulers are willing to sell to us for. What we are able to pay them--based on what we are able to sell for on our markets."

Producers reported they had no voice in price-reporting, as they were not contacted. Mr. Seymour goes on to say this: "It seems obvious from studying the information reported above that the 'market' is set by sources not in Georgia. The price of broilers is probably determined by what the processing plants have been 'offered' by their marketing sources. One could safely assume that 'supply and demand' has very little, if anything, to do with market quotations."

Well, this is a vicious circle. Broiler prices in many other areas, such as Tennessee and Kentucky, are based on the Georgia market. We have had reports that the prices quoted in many instances do not reflect the actual prices paid to producers and contractors on the majority of birds processed. But the few birds purchased to fill out the operation are the basis for quoting prices and these therefore influence the quotations for markets in that area and in other areas.

The challenge facing the entire poultry industry today is tremendous. The marketing of poultry products has, over the years, received less attention than any other phase of the industry. Help is needed in this field--now, not next year.

The value and importance of the Federal-State Market News Service is recognized today as never before by all segments of the industry. This naturally places a greater responsibility on Market News to render more and better service than ever before.

So, along with the challenge which faces both the industry and Market News, comes the opporutnity to work together in accomplishing the overall objective of making the service fit the needs of the industry.

As a basis for further discussion and consideration, we offer the following suggestions:

(1) There is a need for greater emphasis on accuracy.
(2) Investigation: An effort should be made to double-check price data received from different segments of the industry. We can no longer rely solely on processors' figures. Quotations should be checked with contractors and producers to verify prices received.
(3) Changes: Study the system now being used in obtaining prices and other market information. This means the formulation of procedures that would permit changes to meet the particular needs of the ever-changing industry.
(4) Market research: Even closer cooperation is suggested for the overall research efforts of industry, agricultural colleges, and public agencies. More timely research must be concerned with market structure, with prices, and with price-making.
(5) Educational programs: Extreme effort must be expended in developing and promoting an educational program on the value and use of market news service.
(6) Coordination: Better coordination is needed on the part of both industry and public agencies in developing current and long-range plans. This includes our federations, councils, trade associations, regional poultry marketing research committees at our land grant colleges, the several branches of the U. S. Department of Agriculture, and the State department of agriculture, all of which are working on various facets of the poultry industry.

Change is an integral part of progress. Someone said recently that the poultry industry had put on long pants this year. When we grow up we are expected to do a better job. The opportunities in this field are unlimited if we have the ability and the courage to change with the times.

PROBLEMS IN MARKET NEWS AND HOW STATE DEPARTMENTS OF AGRICULTURE CAN HELP IN MEETING THEM

Harry A. Rust, AMS, U. S. Department of Agriculture

Market News is a service designed mainly to assist those responsible for making marketing decisions and thereby to improve their efficiency in moving farm and food products from the farm to the consumer. It keeps them informed of the volume, movements, and trend of supplies;of the intensity of demand; and of the current relationship between supply and demand. The service reflects the latest prices at the various trading levels, knowledge of which is essential to the most efficient production planning and marketing of farm products.

To be most helpful, market news must reflect supply, demand, and price situations at each point in the marketing channel where active bargaining occurs and ownership of goods changes hands. The information must be gathered, verified, compiled, and disseminated promptly by the most rapid means of communication available to provide the maximum value to those making marketing decisions.

Obviously, the collection and verification of information from numerous sources, located over sizable areas, and the preparation, analyzation, and dissemination of reports through the various media, all in a few hours' time, present problems. The more important a market news activity becomes, the more numberous and acute the problems. I have been requested to speak to you briefly today about some of these problems and how the State departments of agriculture can help in meeting them. I welcome the opportunity to discuss Federal-State cooperation in market news, a most interesting and important relationship.

My remarks will be limited to what I have listed as five major problems. In these fields, the State departments of agriculture can be of most help. They are as follows:

1. Developing and maintaining desirable public relations.
2. Planning market news programs most useful at the State level.
3. Securing and maintaining good trade cooperation.
4. Obtaining good cooperation of press, radio, and television in the dissemination of market news.
5. Developing active trade interest and support which will result in necessary appropriations at the State and Federal level.

A reasonable conclusion is that with good public relations, a well-planned program, adequate trade cooperation, and broad news dissemination, market news would have abundant support and finances would be no problem.

Public Relations

Surveys have indicated that a surprisingly small percentage of those who could use market news information are aware of its existence. Furthermore, surveys also reveal that of the number who do use it, the majority do not know who is responsible for the information.

Only a relatively few of those served by market news have any knowledge of how market news is gathered, the purpose for gathering it, and the proper usage that can be made of this information.

The problems of promoting interest and use of market news can best be handled at the local level. State employees, connected in any way with the marketing of farm products, are in constant contact with individuals and groups who can use all the market news information available. If the State agricultural personnel are at least familiar generally with the market news available in their area, they will strengthen their own position in the eyes of the producers. They should understand the way in which the information is gathered, the intended purpose, and proper usage of the information. If they would take advantage of every opportunity to pass along this information to their trade contacts, an immeasurably valuable service would be performed for the industry.

We know that State employees have many diverse duties and this would add to their burden. However, if they would only kindle the spark, and follow up by suggesting that market reporters appear at appropriate meetings throughout the State, a significant start would be made. This is done in some areas. The development and maintenance of such a program has resulted in growing local interest in market news. This has been indicated by an increased number of requests for more information directed to State and Federal agencies, the appropriation of more funds for market news, and, as a result, a larger proportion of the consumer dollar going to the producer.

In our contacts with producers, processors, and handlers, we often ask what information they think they need most. The frequent response is that they prefer to leave the decision up to us when determining what news is to be reported. Such replies are an admission of the fact that producers do not feel sufficiently informed to venture a suggestion. Proof of this fact is that in some marketing areas where market news is widely used, the requests for additional and more specific information often exceed our capacity to supply them.

Planning Programs

How many States have actually conducted surveys to determine the market news needs within their borders? How many have adequate knowledge of the extent to which currently available and needed information is disseminated within their State? How many would be interested in doing something about this problem? A few States have utilized Agricultural Marketing Act funds for surveys of this type.

For most States, interest in market news has been a relatively recent development. Although U. S. Department of Agriculture initiated market news services in 1915, only a few States actively participated until 25 years or more later. With limited appropriations in the beginning, U. S. Department of Agriculture had an inclination to concentrate on the large wholesale markets and on a few major commercial producing areas. Country buyers and shippers throughout the country were dependent upon these terminal market news service reports and upon the somewhat biased information supplied them by city commission merchants and wholesalers. Producers relied upon the local buyer competition to result in a fair price to them. They had little or no opportunity to check prices received locally with those prevailing at the major markets.

The situation is vastly changed now. The Federal and Federal-State market news services make available market information on a wide variety of farm products to anyone requesting it, without charge. The problem in any local area is determining what information is available. What information best meets the local needs? How can it be obtained? This information is available to the State departments of agriculture. If in doubt as to any specific information, a telephone call or a letter to the nearest market news office is all that is required.

Obtaining available local information is only one side of the problem. Would marketing information gathered and disseminated on a statewide basis be helpful to an appreciable segment of the trade? This can only be determined by those persons fully familiar with the situation and those with some knowledge of reporting procedure. State departments of agriculture have personnel acquainted with marketing conditions within the State. If the State does not have trained market news personnel, they are urged to call on the Federal Market News Service for whatever assistance they need.

Trade Cooperation

The success of any market news effort is highly dependent upon the cooperation of members of the trade. Information is obtained on a voluntary basis and respondents are more inclined to cooperate if they can realize some benefits in return. This requires explanation and, often, persuasion. Occasionally someone obstinately refuses to give an accurate account of his sales and prices to the market news reporter. Some even deliberately supply false information in the hope that it will so influence the reported market as to give them a special advantage.

The problem of obtaining accurate information is a very real one and one in which State employees' assistance has been very effective. First of all, the State employees are usually acquainted with the individuals causing difficulties for the reporter. They may conduct official business with them in connection with other service or regulatory work. This acquaintanceship or association frequently is sufficient to place State personnel in a position to convince the respondent that cooperation with the market news reporter is essential.

In collecting market information, the reporter occasionally finds individuals who will take exception to the market report. In their opinion, prices are either too high or too low, or for some reason the report is making it difficult for them to obtain the prices and profits they feel they should have. As a result, these individuals will cease to cooperate and will no longer furnish information. It is necessary for someone to contact them and resolve their differences before more serious problems can develop. Past experience has proved that a representative of the State department of agriculture is quite effective in handling these situations, depending, of course, upon his knowledge and tact.

Market News Dissemination

The collection of information and the preparation of reports are only part of the job of market reporting. Information must be disseminated promptly to the intended user by the fastest media available. The usual procedure for market news offices has been to issue special duplicated reports to persons on a mailing list. This is an effective method of providing official reports to those who have need for them. However, this method is not as rapid as reporting through radio, television, and daily newspaper facilities, and so the market news service desires to expand service through these media.

Adequate commercial radio and press service exist in all sections of the country to meet market news requirements. The USDA Market News Service is not authorized to pay for this type of dissemination. Some States have their own radio stations, and therefore State departments of agriculture can assist substantially in the news dissemination problem by the maximum use of the State radio station for this purpose.

However, it is most desirable to encourage dissemination of market news by commercial radio and press as a public service. A considerable number of market news radio programs are sponsored by feed companies and other commercial concerns, but generally the public service type of program is preferred.

Farm radio program directors and financial editors of newspapers and magazines are readily interested in disseminating market news information. However, they need assistance in the determination of what is available, what is needed, and when and how they can obtain it. Also, they want to know something of the extent of the audience and want some idea of the value of the information disseminated to the reader or listener. The State department of agriculture could be of inestimable assistance in familiarizing radio and newspaper personnel with the desirability of disseminating market news information. State personnel have frequent contact with commercial reporters and the latter are receptive to their suggestions. Market news can frequently be made a part of an agricultural broadcast or press release as a sponsored program or as a public service.

Market News Financing

Adequate financing of any local or statewide market reporting service is dependent upon the needs expressed by producers, processors, handlers, and others in the area affected. In instances where a terminal or a commercial producing area in a given State is of national or regional significance, the Federal Department of Agriculture will finance a market reporting service in full or in part. However, if the area is only regionally or locally significant, the State is expected to bear a proportionate share of the entire cost.

According to past experience, USDA will rarely initiate a service without receiving requests from those directly to be affected by the proposed service. Personnel in the State departments of agriculture generally realize that if the USDA is to participate in a market news venture, bona fide requests must be received from persons to be served. This same requirement prevails with respect to some State departments of agriculture, and may be quite general among the States. The State departments of agriculture can assist in obtaining initial or additional market news funds by directing those requesting market news services to address their requests to the Federal as well as the State departments of agriculture.

During recent years, another problem has arisen in connection with financing market news programs. The State departments of agriculture can strengthen their programs by proper planning. A number of market news projects have been initiated under the Agricultural Marketing Act matching fund program. Some have been continued as market news services and financed in part by Federal Market News appropriations. Other projects have died at the end of the 2-year experimental period because no market news funds were available to replace the Agricultural Marketing Act funds. This might have been avoided if certain precautionary measures had been taken. The State departments of agriculture can help considerably.

I would suggest two essential steps which, if taken would certainly improve the chances of these projects. They should be undertaken only after consultation with the USDA Market News Service, and the latter should be consulted from time to time with respect to the technical phases of the work. Furthermore, early in the second year of the trial run, requests should be made to the Secretary of Agriculture for the continuance of the project as a Market News Service. Such requests should give an appraisal of the service backed up by requests from bona fide users. On the basis of these requests, and on the USDA's own appraisal of the project, recommendation to Congress for appropriations will be made.

A suggestion has been made that the USDA should make a provision to automatically replace Agricultural Marketing Act funds with market news funds at the expiration of the 2-year experimental period. According to the suggestion, this would avoid the possibility of having to discontinue an active service on which time, effort, and money have been spent. Some merit is present in such an arrangement. However, we must realize that Agricultural Marketing Act funds are for experimental purposes. They are to be used where some question exists about the possibilities of establishing a new service or about the development of new procedures or new types of information. These funds might be considered as risk money and not in the same category as market news funds, which are appropriated for a more specific purpose. It follows that not all projects developed under the Agricultural Marketing Act project would be acceptable for continuance by market news. Furthermore, the same amount of money usually would not be necessary to carry on a service project as was expended during the experimental stages. Even under favorable conditions, making a smooth transition from Agricultural Marketing Act to regular service projects is sometimes difficult. State departments of agriculture can assist with the necessary negotiations.

In closing, I hope it doesn't appear that all we have in market news are problems, nor that we are not reasonably successful in overcoming these problems. Even so, the State departments of agriculture could make market news activities and programs more effective and pleasant with increased assistance in the development of more favorable public relations, more beneficial programs, improved trade cooperation, broader news dissemination and more adequate financing.

CONCLUSIONS AND RECOMMENDATIONS

of Poultry and Egg Work Group

This group concluded, on the basis of limited experience of a few States with State trademark programs, that the promotion of poultry and eggs by this means has its merits, provided proper supervision and quality control standards are adhered to. It recommended that U. S. Department of Agriculture grade standards be used in these programs and believed that they could be improved by coordinating them with promotional activities of a national agency such as the Poultry and Egg National Board.

With respect to these State seal of quality programs, it was recommended further that more research by qualified personnel be undertaken to evaluate the effectiveness of different types of promotion. Results of this research should be promptly disseminated to State, Federal, and other interested agencies.

There was agreement within the work group that programs to improve poultry processing and egg packing plant efficiency should receive top priority in the States. Conclusions and recommendations of the group with respect to the development and operation of programs of this type were:

1. Before a program of improving plant efficiency is initiated, the need for such a program must be recognized by the State. Work should be started on some of the more obvious and universal problems in processing poultry and packing eggs. This will give new personnel a "feel" for the work and help them in attacking more difficult problems.

2. The program should be supervised and operated by qualified personnel. There should be at least one person on the State marketing staff qualified in the application of the basic principles of materials handling. To provide this type of personnel, a State may want to consider hiring an industrial engineer.

3. The person or persons selected to conduct plant efficiency work should start by working with someone acquainted with operations and problems on a national scale.

4. Opportunities for further training in the plant efficiency field should be provided. Training schools conducted jointly by the States and the U.S.Department of Agriculture were suggested as one possibility.

5. Security and continuity of employment are essential to the development of a successful program in this field.

TIMBER PRODUCTS

Work Group Sessions

STATUS OF THE TIMBER PRICE REPORTING PROGRAM IN ILLINOIS

Charles E. Rogers, Illinois Cooperative Crop Reporting Service

Despite the fact that Illinois is thought of mainly as a crop and livestock area, the sale of timber products is important. Our latest report, of which you have a copy, lists Illinois timber resources at 3 million acres and annual sales at $1 million. We were using rounded United States Census figures which include only forests on land in farms. Since publication of the report, one of the foresters in the State called our attention to Forest Resource Report No. 14 as one of the best reports of its kind available. This report shows that in 1953, almost 4 million acres, or 11 percent of the total land area in Illinois, was forest land. The same report shows sales of forest products in 1952 totaling over $3.5 million. Compared with States in the main timber areas, and compared with other crops in Illinois, these figures are small, but annual sales of any product in a State of over $3.5 million can hardly be called unimportant. In addition to the 4 million acres covered with forests at present, many more acres should be covered.

Much of the timber acreage in the State is in small, irregular farm woodlets, which receive only limited management as a sideline to other farm operations. The farmers know little about the handling of woodland and the sale of timber products. Both the University Extension Service and the State department of conservation, division of forestry, have for many years, as a part of their programs, made help available to the public in selecting timber for sale and in finding buyers. However, these foresters were able to offer the seller only limited help, except from their personal knowledge, in arriving at a reasonable price for his products. Neither the forester nor the farmer had adequate information to use as a guide. Much of the information available was not current and was compiled from intermittent surveys, offering little help in projections or other calculations. This lack of knowledge discouraged new plantings, discouraged better management, and many sales were made on a per-acre basis through loose agreements. This led to poor cutting practices and abuse of the remaining stand in many cases. We are sure that we have not solved all of these problems, but hope and believe, that by making price information available to all, we have helped.

In March 1951, a forester in the State contacted the Crop Reporting Service and asked about the possibility of having prices published for timber products. He pointed out that we do furnish the public with prices for many other farm products in a "Prices" report, but not for timber products. The Crop Reporting Service agreed that such prices might be desirable, but pointed out some of the problems which might be encountered in gathering the information. Compared with other products, timber sales are few. An individual might make only one sale a year and have little idea about prices the rest of the time. Buyers might be surveyed, but current lists were unavailable, and with the mortality and change in the industry, the keeping of current lists could be quite a problem even if a beginning list was available. The marketing and utilization committee of the Illinois Technical Forestry Association had also been discussing the problem. This association is composed of State forestry division employees, extension foresters, Federal foresters, private foresters, sawmill operators, and others interested in forestry and the timber industry. The association indicated interest in the work and felt that the membership was in an excellent position to collect price data, mainly in connection with their regular work. They were interested in collecting the data if the Crop Reporting Service would compile and publish it.

We met with the committee in January 1952, and agreed to help with the project pending approval of the Illinois and U. S. Departments of Agriculture, which was readily secured. The association voted to go ahead with the project and began preliminary work immediately. The State was divided into zones and a tentative questionnaire was prepared. Materials from a similar survey in Kentucky and one in Georgia furnished a guide in materials and procedure. The Georgia

Crop Reporting Service also suggested some of the problems which might be encountered if the project were incorporated into the regular program of the Crop Reporting Service. Other agencies also furnished helpful material, suggestions and comments.

In January 1953, the foresters began their collection of data for the report. For this survey, the questionnaires were distributed by personal contact and filled out immediately wherever possible. Information was secured from about 90 firms currently buying timber products. The chairman of the marketing and utilization committee, ITFA, assisted in editing the questionnaires and furnished technical advice from the forestry angle. The data were summarized and a release made in May 1953. Judging from requests, the report was well accepted from the beginning. Another survey was undertaken in the fall of 1953. The questionnaires for this survey were mailed to a list of buyers, compiled by the foresters from their first survey and from other contacts. After allowing ample time for the questionnaires to be returned, the foresters made a personal followup of nonrespondents. In this manner an excellent return was obtained from the original mailing of 132 questionnaires.

Until this time, the surveys were being made as individual reports, with no definite plans for continuation. In early 1954, the Forestry Association decided to make the surveys a continuous part of their regular program with a survey once every 6 months. Each survey would cover prices during 2 months; a summer survey covering July and August, and a winter survey covering January and February. In August 1954, the questionnaire and plans for the survey were submitted to the Budget Bureau. After further correspondence and requests for more information, the survey was approved, making possible use of the franking privilege.

Semiannual surveys similar to the 1954 surveys have been made to date. Questionnaires are mailed in late August and late February to cover the corresponding previous 2 months. Second requests are mailed to nonrespondents about 10 days later. After another 10 days, the names of remaining nonrespondents are sent to the chairman of the marketing and utilization committee, ITFA, for distribution to their members, who make as many personal contacts as possible. About 3 weeks are allowed for these contacts before the survey is summarized. The questionnaires are punched and adapted for use on pegstrips. In the past, the average of all reports and the range of all reports, by zones and for the State, were shown with little narrative except for definitions and explanation of terms used. In addition to the regular report, several times we have tried writing a release specifically for news media, with varying degrees of success. In the most recent report, the definitions and explanations were incorporated into the narrative portion in hopes of getting more publicity from the news media. We receive news clippings from throughout the State through the Illinois Department of Agriculture, and are able to judge the success or failure of news distribution. We have received several stories from this report and believe it to be an improvement over previous reports in this respect.

The present questionnaire covers virtually the same items as the original questionnaire except that fence posts were tried and dropped. We found that sawlogs have been the main item sold. We have made no provision for the reporting of stumpage for sawlog timber. It has been the policy not to publish a figure from only one report, and not to publish a range from less than 3 reports. For products other than sawlogs, this has prevented publishing a figure for zones in many cases, and the item was footnoted "not published to avoid disclosing individual operations." We feel, however, that the listing of other items may make people conscious of the existing market for them. Prices are collected by species for commercial veneer, container veneer, and sawlogs. Pulpwood is classified as hardwood or softwood and peeled or unpeeled. Other items are white oak cooperage, piling, and mine materials. The question of gathering prices by grades was discussed in initiating the report and has been discussed since. Even though this is generally considered desirable, several disadvantages have been recognized, and to date no attempts in this direction have been made.

The foresters have been able to keep our list of buyers reasonably current, usually in the course of their work, and by visiting nonrespondents in the surveys. A list of persons to receive the reports was compiled in 1953 by the foresters, and includes respondents in the surveys, members of ITFA, all farm advisers in the State, and our list of news media. This list has been modified as needed by adding or dropping names on request. Numerous requests have been received throughout the years, both for the information contained in the release and by forestry groups in other States for information on the mechanics of such a survey and report. Many of the requests by growers for the information have been referred to the State division of forestry for possible aid by their farm forester in that area.

Data have now been collected semiannually for 5 years and are being compiled for publication in bulletin form, possibly along with other available data on the timber industry.

We have found our collaborators, the Forestry Association, to be an enthusiastic group, thoroughly interested in their profession and free and willing in their cooperation. Our overall relations with them have been excellent. Several changes in our project are now being considered by the group.

THE NEED FOR IMPROVEMENT AND EXPANSION OF MARKETING DATA PROGRAMS FOR TIMBER PRODUCTS

H. F. Siemert, Illinois Department of Conservation

To me the answer to this need for improved timber products marketing data is really quite basic and simple. The price reporting of timber products--as it seems to be carried on throughout the country today--just isn't getting the job done that a crop report could and should do! Hence, a rather obvious need for improvement and expansion.

Most of you should know, but some of you might be wondering about, the purpose or job of a timber crop report. The answer lies in the archives of your own wonderful crop reporting history. According to my facts 1862 was the historic year for you. That was the year crop reporting as we know it today was born! It was then, I am told, that farmers suddenly realized, and understandably didn't like, the fact that buyers of their goods had more information than they did, and, consequently, repeatedly got the better of them. Something had to be done, and the Federal Crop Reporting Service was born--and born with it was also its fundamental purpose: To give both the buyer and the seller the same information so that they could both operate on equal terms."

This is precisely what I think a timber crop report should also do. Give both the buyer and the seller the same information, so that both can operate on equal terms. We in the forestry field seem to be about 100 years behind the times, for, much as in 1862, some of our timber producers in Illinois (almost all are farmers) are just now beginning to realize and mildly inquire about the different products and values they have in their woodlands. Of course, if we ask most of these farmers what the price of corn is today, right away you'll hear "$1.14 for Government corn; $.95 at the elevator." But ask these same farmers, who for the most part also own 20 to 40 acres of timber, what cooperage, or veneer, or sawlogs, or even pulp is bringing these days, and most of them won't even know what your're talking about--let alone know the answers. Since timber products can sell as standing timber all the way from $200 down to $10 per thousand board feet (it could be per tree if it happens to be big enough), you can quickly see where our "unknowing farmer" friend is at a real disadvantage. Hence, the main reason why I believe a good, effective timber crop report is needed is to keep everybody in the know.

There are other reasons why timber crop reporting is important and needed. Not only does quoting of timber prices give landowners this obvious "fairer shake" when it comes to dealing with timber buyers, but, equally important, it provides woodland owners with what I like to call "facts of life." These are the facts which are so necessary for the intelligent management of any crop, but especially the timber crop. Incidentally, timber is considered a crop. True, it's not an annual crop like corn and beans but, nevertheless, it is a growing crop which should be harvested periodically. And, being a crop, it also needs many of the considerations, and thinking inherent in any other crop management, including price reporting.

As you all know, the dissemination of crop information for use by farmers and others is fundamental, it's big, and it's becoming all-inclusive. Today you can get crop data for anything from fruit to honey. The very same reason that these reports are wanted, prepared, and used for regular crop management work should also apply to the timber crop. I'm sure that if you know that nice white oak and walnut are worth 5 to 10 times as much as ordinary black oak or elm, you will favor woodland management. So, let's hang out these dollar signs and a price tag in the farmer's woods and let the timber owner see the wide variety of products and values present. Let him discover that, just as in any other farm produce, there is good and there is bad--there is productive and there is nonproductive--and being human, he's going to want as much of that productive, good stuff as possible.

Once he's armed with these price and value facts, our farmer-landowner is soon able to realize that there is such a thing as a minimum economical commercial cutting; that the deadening of slow-growing, undesirable, and cull trees is good business; that scattered, low volumes of "ripe timber" are best harvested (and even used) by himself; and that it's certainly good business to save, nurture, and even pamper these nice 18-to 20-inch young potential veneer trees up to the bigger diameters (at least 24") where the real timber money is. This, to me, is "dirt forestry economics"--the kind a farmer wants to know and appreciates; and this is what a good timber crop report can help tell a farmer.

This, then, gets us into a third advantage and need for accelerating and intensifying timber crop-reporting efforts. It might startle you to know that over half of today's forest resource is owned by farmers and small business people. Yet, this particular ownership represents forestry's "sorest thumb"--for the poorest forest management (usually none) occurs on the 265,000,000 acres these people own. If good, effective timber crop reporting can reach and motivate a goodly share of these 4½ million landowners (with their average 60-acre woodlot) and make them forestry and forester conscious--then we feel a giant first step will have been made in conserving this crucial segment of our forestry resource. Thus, perhaps, the third reason for having a good timber marketing data program ties in with our very national strength and welfare--for it should help get more awareness, appreciation, and even better action on this part of our great natural resource--the small woodland.

There are still other, more local advantages found in unbiased reporting of timber price facts. I imagine that many of you may have heard of, or perhaps have even experienced, that inherent distrust and even resentment that many landowners have against sawmill men. This distrust and deep suspicion which many farmers have developed for timber buyers, their prices and their methods, isn't completely fair. Wouldn't you agree with me that this public reporting of timber prices will shed some badly needed light on this subject? And that it will make the farmer just a little more tolerant and even willing to do business with the timber cutters? We still occasionally come across owners who just absolutely won't sell their timber because of just this distrust and suspicion--and a good public reporting of timber prices might just be the answer.

My last reason for price reporting borders somewhat along our original vein of thought. There is definitely a need for well-known standards of what is "fair and right" in the way of timber prices for different forest products today. Such common knowledge benefits not only the timber producer, but also all the others involved.

So it must seem pretty obvious and elementary that there are all sorts of reasons why timber price reporting is needed--and how it can do considerable good. What must be done, or at least thought about, in order to get this job done? That brings us to why we're here today, and I only wish I had answers here.

I guess we all agree that interest in this field is developing to the point where it stands a good chance of being a regular report, probably State by State, to be put out by the official price-reporting agency--namely, you in the Federal-State cooperative crop reporting services. We foresters have an immense interest and stake in this report too, for it can do an awful lot for forestry, if it is done right. That is why we in forestry want to and will work with you as much as is physically possible to get this thing going right. That certainly has been the case in Illinois--where the Illinois Technical Forestry Association, a group made up of all forestry people, pitched in and helped things along as needed. While we foresters for the most part are not versed in agricultural economics, statistics, and price reporting, we certainly can give you the benefit of our experiences, both technical and in our dealings with farm folks.

For instance, we'd like to needle (and help) your folks to:

1. Keep the timber report complete and accurate; yet have it as simple as possible so that it can easily be read and understood by "farmer folks."

2. Make sure it gets the real promotion and publicity it needs in order to reach and be used by landowners if it is to do good.

We would also like to encourage as uniform an approach and development of timber crop reporting as is possible, especially on an area basis. Such uniformity would certainly speed up acceptance and understanding by the masses of such a report. For instance, if Federal timber crop reporting would also materialize in Ohio and Indiana as it has in Illinois, why couldn't they be approached similarly, since the 3 States are pretty much alike forestrywise? As a step in this direction, our professional forestry society, the Central States Chapter of the SAF, which incidentally covers these 3 States, is setting up a committee to study the feasibility of just such standardization, with the main purpose of being ready to help you folks in this timber crop reporting, and at the same time, make it that much better and popular where it really counts--at the landowner level.

So, in conclusion, I'd like to reiterate that I firmly believe that this timber crop reporting is a good and a coming thing. How fast and just how good depends really on both of us; you crop reporting people and we foresters. Personally, I think we can make a pretty good team. I only hope we get the opportunity to do something about it soon!

INDIANA'S TIMBER MARKETING REPORTS

Roy C. Brundage, Purdue University

Timber marketing research and extension began at Purdue about 30 years ago. Our concept of marketing at that time was and still is, that it has two parts, selling and buying. It is axiomatic that whoever produces a commercial product must find a buyer. In our timber marketing work, an attempt has been made to aid both the producer of timber products and the buyers of these products--the farmers and other woodland owners on one hand, and the sawmill operators, veneer mills, and other buyers on the other. Early in our marketing work, we found that one of the first things that an owner with timber for sale needed to have was a listing of markets and the kind of timber that each of the markets would take. Requests for information on markets were so numerous that in 1930, the first lists of timber buying industries were published. These lists were first used mainly by woodland owners, but in the last 15 years lumber wholesalers, distributing yard operators, and manufacturers of furniture and other products have asked for them, and have requested that they be placed on our mailing list for subsequent issues.

In addition to learning what markets are available, woodland owners have to find some means of getting their timber to the attention of prospective buyers. New York State around 1920 issued a timber marketing bulletin to help bring sellers and buyers together. This service has been successful there, so in 1949, the Purdue department of forestry and conservation began a similar service. About five issues go out a year, containing listings of "timber for sale" and "forest products wanted."

The listings in these are coded under the counties where the timber is located. Most listings show species, number of trees, sometimes the diameter range of the trees, and an estimate of volume.

The material for the marketing bulletins is sent in by extension foresters, farm foresters, soil conservation planners, and often by timber owners themselves. The last bulletin that went out contained listings of nearly 150,000 board feet of timber and 70,000 Christmas trees. The Timber Marketing Bulletin, or the Forest Products Marketing Bulletin, as it will be named, since Christmas trees, posts, poles, and other products are included, is mailed to the wood-using industries of the State. The September issue containing Christmas trees was sent to Christmas tree wholesalers.

Buyers who are interested in any of the listings of timber or other products contact our department or the extension foresters for the name and address of the product owner, and it is then up to the two parties to make the terms of a sale.

While the listings in this bulletin are a service to woodland owners, we believe that they are of benefit to the wood-using industries. Some in industry claim that it does aid them with procurement, but others say that "it creates more competition and thereby increases their stumpage costs."

No factual data are at hand to prove these claims, but it seems to me that a listing does one thing for prospective timber buyers. It shows that the woodland owner has made up his mind to sell. Frequently buyers make repeated calls to find out if an owner has finally decided to sell. Such calls require time and travel and these increase buying costs.

A third marketing report publication at Purdue is an annual price report. Here again price reporting goes back to 1930.

Questionnaires are mailed each year to all active sawmills, veneer mills, and similar industries in the State, and prices are requested for a definite period. Only prices for delivered products are requested, and for sawlogs the price breakdown is according to the four Purdue log grades. The grades are Prime, No. 1, No. 2, and No. 3. They are described and diagramed on the questionnaire. Most replies come from sawmill operators, and a 25 percent sampling is made.

Any price, to be meaningful,should reflect the time it was current, the place where it applied, and the quality of the products. In order to meet these requirements, we have held to quotations of delivered products and have not included stumpage.

The demand for the price report is great, and some 4,000 copies are distributed each year.

Purdue also has other marketing bulletins. These include, "How to Measure Trees," "How to Measure a Woods," "How to measure Logs" and "How to Grade Hardwood Sawlogs." In addition we have a mimeographed report on "Marketing Farm Timber." With the aid of this material, together with the three publications mentioned earlier, the department of forestry and conservation at Purdue is endeavoring to supply marketing assistance to both sellers and purchasers of woodland products.

WHAT WE ARE DOING IN WEST VIRGINIA TO ESTABLISH A BETTER TIMBER MARKETING SYSTEM, AND THE KINDS OF DATA WE NEED FOR THIS PROGRAM

John D. Stiles, West Virginia Department of Agriculture

For the last few years many meetings and conferences have been held in relation to establishing a timber marketing program in our State. In West Virginia we found that in all the timber sales made, 63.3 percent of the sellers had no presale knowledge of markets. Of the 36.7 percent who had presale knowledge, 16.7 percent got the information from their neighbors, 0.9 percent from newspapers, .05 percent from farm or county foresters and 18.6 percent from other sources such as buyers.

In sales of 70.7 percent of the timber, one buyer made an offer to the farmer and it was accepted. The seller set the price on 14.9 percent of the timber, and a compromise on price was made by the buyer and the seller on 9 percent of the sales. Only .09 percent solicited bids before they made a sale, and 4.5 percent of the sales were made by other means. With this information, and the fact that 64 percent of our State land area was occupied by forests, we realized we had a great potential for a timber marketing program.

At the meetings and conferences previously mentioned, we talked with foresters and agricultural workers on how a program could be designed that would do the complete job of marking, harvesting, and marketing the timber for the landowners.

A proposed timber marketing program was designed to enable West Virginia's woodland owners to market their timber in keeping with accepted forest management practices. Timber offered for sale will be cruised by foresters, and the data covering species, volume, and grade will be made available to buyers. Generally, it will cover several woodlots. Sales will be on a contract basis with a 10 percent down payment required.

Logging operations and marketing arrangements will be handled by a local group such as a soil conservation district. The district will be given assistance in contacting buyers and making sales by the marketing service of the State department of agriculture.

This proposal was made at a general meeting of all agencies, and after that meeting another meeting was held where the following program was set up:

1. The West Virginia Department of Agriculture, with the assistance of the county foresters, extension foresters, sawmill operators, and timber

buyers, will collect information on saw timber and lumber which could be published in a market newsletter, as to prices received, species, grade, and area of the State covered by this report. This market newsletter would be published quarterly. The department of agriculture will also make a list of potential buyers of saw timber and lumber which will include volume, species, and grade; and information as to what the lumber and timber would be used for, and approximately what prices the buyers would be willing to pay. This information will be compiled for use later as other agencies develop their part of the program.

2. The West Virginia Extension Service and the West Virginia Conservation Commission will make a report available to sawmill operators and buyers which will show marked timber, timber stands, and the needs of sawmill operators and buyers, along with timely editorials which will give informational tips on better management and marketing practices.

3. The West Virginia Conservation Commission and the West Virginia Extension Service will try to organize the sawmill operators so that an educational program can be developed which will be a valuable asset to the industry.

4. A pilot area was selected in the Southern Soil Conservation District, where a logging service will be developed. The county forester will mark the timber, and work with sawmill operators to establish local market outlets. The list of buyers will be compiled by the department of agriculture and made available as outside buying interests develop for this pilot area.

Another meeting will be held to compile all of our information and coordinate the efforts of our forestry and agricultural agencies in conducting this program.

CONCLUSIONS AND RECOMMENDATIONS

of Timber Products Work Group

The discussions of this work group brought out the following information as a background for its conclusions and recommendations:

Timber is a natural resource shared in varying proportions by every State. Woodland makes up approximately one-third of total land area. Half of the Nation's farms report woodland, compared with 75 percent for cattle, 60 percent for corn, 50 percent for hogs, 35 percent for chickens, 20 percent for cotton and 15 percent for soybeans. Small ownerships predominate in private commercial forest land, with 34 percent of holdings averaging under 100 acres each, and 27 percent ranging from 100 to 500 acres. The woodland on farms averages 80 acres. Commercial forest land is mainly in the East; current saw timber volume is mainly in the West, but capacity to produce saw timber is mainly in the East. Commercial forest acreage accounts for one-fourth of the Nation's land area compared with one-fifth for crop land.

Woodland owners are beginning to realize that timber is not a one-time crop but a renewable resource that can be harvested, marketed, and produced again.

The recognition of timber as a crop has emphasized the need for market information on products in demand and prices being paid for them.

Although timber prices for the same product vary widely because of location, quantity, and quality, they vary more in the absence of market quotations.

Half of the farms produce timber, but on most of them sales are infrequent and, as a result, owners are not informed of prevailing prices or how values have changed since the previous sale.

A regularly scheduled report on timber prices by kinds of product makes it possible for seller and buyer alike to deal with each other on the basis of the same market information.

At present, timber price reports are issued regularly in a limited number of States.

Representatives from other States present at the workshop session indicated an active interest in similar reports in their States.

The conclusions and recommendations of the work group were:

Seasonal variation of timber prices is slight. For that reason it was the consensus of the group studying the problem that probably in most cases an annual survey of prices would be adequate.

Timber buyers and mill operators are considered to have the most knowledge about timber prices. This is probably a better source of information than producers, whose knowledge may be limited because of infrequency of sales.

Experience in States now making timber price reports indicates that the mailed inquiry, with a second request to nonrespondents, is probably the most efficient method of collecting the information. Where possible, it may be desirable for foresters to assist in educational work, giving encouragement to reporters to supply information, and in some cases to assist in the collection of data by personal interview.

In the interest of simplicity and because of varying conditions between States, it seems desirable for each State to develop its own schedule to fit local needs. However, it probably would be desirable to work toward as much standardization as possible in designing the schedule.

Timber prices vary widely because of quality, quantity, location and absence of price information. For this reason, it seems desirable that price information released to the public be expressed as ranges and averages by zones and by standardized hardwood grades. Prices for a State as a whole may be almost meaningless to users of the data.

It seems desirable to collect volume data on timber marketing as soon as possible, in order that prices can be weighted by volume.

It is the opinion of the group that at the next workshop a section should be devoted to timber prices to encompass an additional year's experience of

States now making timber price reports and the experience of any new States in the timber price field. It is also urged by the group that a man from the industry present a paper outlining the industry problems. It is also recommended that more State and Federal foresters be invited to participate.

CONCLUDING REMARKS

Leighton G. Foster, Liaison Office, Matching Fund Program, State Departments of Agriculture, Agricultural Marketing Service

Before closing this twelfth marketing workshop, 11 of which I have had the privilege of attending, I would like to express my appreciation for the fine working relations that we have had during this period. As many of you know, this is the last workshop that I will attend, and I want you to know that I wish each of you success in developing effective programs that will assist in the solution of the many marketing problems which lie before you.

Each year the host State assumes the responsibility for making the arrangements for the annual workshop, and those directly responsible have many duties added to their regular responsibilities. We want to thank Dean Butz, Kent Ellis, Dr. John Hicks, assistant to the president, Bill Farris, Cliff Cox, Mr. Valley, the director of the Student Union, and other representatives of Purdue for making their facilities available and our stay pleasant and enjoyable. I also wish to thank the secretaries of the work groups, who have assisted--Don Wilkinson, James E. Reynolds, Donovan MacPherson, Bradford Armstrong, E. C. Collins, R. P. Callaway, John Crothers, and Robert Straszheim.

I want to thank "Kelly" Callaway for the footwork. Most of you don't realize the amount of time and thought required to prepare a workshop program and get it in operation. Our advisory committee first discusses the desirability of holding a workshop and then decides on the theme that might be used and the approximate time and place for the workshop to be held. A committee is then appointed to work out the rough outline of the plans for the workshop and the approach that should be used in carrying out the detailed plans.

The personnel of the Liaison Office greatly appreciate the willing assistance given by these individuals, as well as the work group leaders, chairmen, and secretaries of the various work groups. We also express our appreciation to Dr. Francis W. Trimmer, Pastor, Federated Church of West Lafayette, for the invocation which opened our sessions.

"Workshops" mean work by the participants. It is a forum where each participant has the opportunity to teach and learn. Looking back over the past 12 years of workshops, I am impressed with the similarity of the development of a boy entering the first grade, and, through close attendance to his studies, being able to graduate from high school, to the growth of the workshops since their inception. Each year has made a contribution to the knowledge of the boy and to the improvement of the workshop, and each year more complex problems have been discussed for which solutions have been sought. Future workshops, no doubt, will make continuing contributions toward the improvement of the marketing service program. This workshop has wisely given more attention to the discussion of the development of more efficient local marketing agencies that will be able to deal with constantly increasing concentration of buying power.

American agriculture has been changing at an ever-increasing rate during the past 15 years. Machines have replaced farm labor, decreased the number of farms, and increased the size of the farm enterprises. Our marketing system has also been changing rapidly with the integration of wholesaling and retailing functions. Farmers, even with the increased size of the individual farm enterprise, are faced with the problem of being able to meet the requirements of the specifications demanded by large-volume buyers.

If the marketing service programs of your departments are to be improved, it will require the continued interest and support of the heads of your departments. While 11 directors or deputies are present and their support is encouraging, more support of this kind is needed if the programs are to be effective in the States participating in the program. I was glad to note that information programs, especially statistics and market news, received closer scrutiny as to their usefulness in solving marketing problems. There are 212 persons in attendance from 36 States, Puerto Rico and the District of Columbia.

I believe strides forward are being made in the promotion of agricultural products, but care should be taken not to overestimate what can be accomplished. Our workshop speakers have made challenging talks that you should take seriously, and you should attempt to seek application of their discussions to your local problems. After you have done your best, there will still be plenty of unsolved problems.

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